



## Determination to resolve 0870 call termination rate disputes between BT and various operators

This is the non-confidential version. Confidential redactions are marked by “[



# Contents

| Section | Page   |
|---------|--|
| 1       | Summary  |
| 2       | Background   |
| 3       | History of the disputes  |
| 4       | The submissions of the parties   |
| 5       | Dispute resolution powers, statutory obligations and regulatory principles |
| 6       | Ofcom's analysis and reasoning   |
| 7       | Consideration of responses to the draft Determination and conclusion       |
| 8       | Summary tables   |
| <br>    |  |
| Annex   |  |
| 1       | The Determination  |
| 2       | TCPs referred by BT on 7 July 2007   |
| 3       | TCPs referred by BT on 6 August 2007                                       |
| 4       | Derivation of the no-arbitrage ceiling                                     |
| 5       | Calculation of Option 1 and Option 2 rates                                 |

## Section 1

# Summary

- 1.1 Ofcom has published a Determination (“the Determination”) under sections 188 and 190 of the Communications Act 2003 (“the Act”) to resolve a dispute between BT and the communications providers listed in Appendix 1 to the Determination.
- 1.2 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.
- 1.3 On 28 September 2005, Ofcom published a consultation entitled *NTS: A Way Forward*<sup>1</sup> (“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.
- 1.4 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 Condition”)<sup>2</sup>, which required BT to retail and originate calls to 0870 numbers on behalf of other communications providers on cost-related terms, thereby enabling revenue sharing on 0870.
- 1.5 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.
- 1.6 Although some TCPs agreed the rate proposed by BT, many did not. The TCPs listed in Appendix 1 to the 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. BT therefore referred the resulting dispute to Ofcom for resolution on 7 July 2007, asking Ofcom to determine what charges should be payable.
- 1.7 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 website<sup>3</sup>.
- 1.8 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 range came into effect.

---

<sup>1</sup> [http://www.ofcom.org.uk/consult/condocs/nts\\_forward/nts\\_way\\_forward.pdf](http://www.ofcom.org.uk/consult/condocs/nts_forward/nts_way_forward.pdf)

<sup>2</sup> [http://www.ofcom.org.uk/consult/condocs/narrowband\\_mkt\\_rvw/nwe/fixednarrowbandstatement.pdf](http://www.ofcom.org.uk/consult/condocs/narrowband_mkt_rvw/nwe/fixednarrowbandstatement.pdf)

<sup>3</sup> [http://www.ofcom.org.uk/bulletins/comp\\_bull\\_index/comp\\_bull\\_ocases/open\\_all/cw\\_963/](http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ocases/open_all/cw_963/)

- 1.9 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 be resolved (in the form of a non-confidential draft determination) was sent to the parties on 16 November 2007 and subsequently published.
- 1.10 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.
- 1.11 Following the publication of the CAT's judgments of 20 May 2008 and 15 August 2008, we reopened our consideration of this dispute.
- 1.12 In its judgment dated 20 May 2008<sup>4</sup>, 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 resolve this dispute, as has our principal duty to further the interests of citizens and the interests of consumers in relevant markets, where appropriate by promoting competition. 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.
- 1.13 On 6 May 2008 Ofcom published the consultation document Changes to 0870 ("the 0870 Consultation"), proposing a number of changes to give effect to the NTS Statement. On 23 April 2009, Ofcom published a statement<sup>5</sup> confirming these changes ("the 2009 Statement"), which will take effect from 1 August 2009.
- 1.14 On the same date, Ofcom published a new draft determination for resolving the dispute ("the draft Determination") and invited comments from the parties to the dispute and other stakeholders by 7 May 2009. Ofcom proposed that its resolution of this dispute would take effect from the date the policy changes came into effect, i.e. 1 August 2009.
- 1.15 Having considered stakeholders' comments in response to the draft determination, Ofcom has not made any significant changes to the proposals set out in its draft Determination, in particular the methodology used for calculating the termination charges.
- 1.16 With the exception of two respondents, which were broadly supportive of our proposals, respondents argued that the rates we proposed either were too low or were too high. It is clear from this that there is no solution that can address the views expressed to us to the satisfaction of all respondents. We have, therefore, exercised our discretion in resolving this dispute to find a solution which we consider is the best outcome in terms of meeting our statutory duties and achieving a fair balance between the parties.

---

<sup>4</sup> 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 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](http://www.catribunal.org.uk/files/Judgment_TRDs_200508.pdf).

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

- 1.17 We accept BT's view that the changes Ofcom has made to the 0870 numbering range justify alterations to the termination charges that they pay to TCPs. However, we have concluded that BT's proposed termination charges are not sufficient to adequately cover certain costs for which we think BT should be responsible. 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.
- 1.18 Since we have concluded that BT's proposed termination charges may not be reasonable for the purposes of resolving this dispute, we also conclude that the TCPs are justified in rejecting them.
- 1.19 As set out above, a number of TCPs proposed alternative charges, although subsequently some of these proposals have been withdrawn. Our assessment of the remaining proposed charges leads us to conclude that these charges are too high to be reasonable, given Ofcom's policy to re-establish the links between retail charges for 0870 calls and those for geographic calls. We have concluded that the charges proposed by the TCPs would be likely to deter BT from linking the retail prices for calls to 0870 numbers to the prices for calls to geographic numbers.
- 1.20 Ofcom therefore considers 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 (notably our principal duty to further the interests of consumers), as expressed in particular by our policy aims to improve price transparency for 0870 calls and thereby enhance consumer protection and competition.
- 1.21 We therefore went on to consider other options. The methodology that we have followed is explained in section 6 below. In summary, we have set 0870 termination charges at a level that enables TCPs to recover geographic call termination charges plus other costs that we consider relevant, namely the costs related to near-end handover and an allowance for interconnection circuit costs.
- 1.22 We considered two options for these relevant additional costs:
- **Option 1:** 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 would allow 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.
  - **Option 2:** 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 (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 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.

- 1.23 As a cross-check, we calculated a “no-arbitrage ceiling”. Arbitrage is the practice of taking advantage of a price differential. High charges paid to TCPs (which may be above the costs incurred in providing the termination service) could create the possibility of arbitrage activity. The no-arbitrage ceiling represents a level above which we consider 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.
- 1.24 In the draft Determination, Ofcom proposed to adopt the Option 2 (FAC) rates. Having considered stakeholders’ comments, we remain of the view that Option 2 represents the outcome that is most fair and reasonable, and is consistent with Ofcom’s statutory duties and obligations.
- 1.25 Ofcom has therefore determined that BT is required to purchase termination of calls to 0870 numbers at the rates set out in Table 1 below, with effect from 1 August 2009. We have set two different rates for calls handed over at the near end, to capture the additional conveyance costs incurred by the TCP and thereby create appropriate incentives for efficient interconnection. We have taken a different approach for calls handed over at the far end. Rather than having different rates for each point of handover at the far end (short, medium and long) we have chosen to set a single rate floor for all traffic handed over at Single Tandem (far end) to reflect the rate that would be paid out to a TCP for an equivalent geographic call. We consider that the differential between the rates for near end handover and far end handover provides an incentive for TCPs for reasonably efficient interconnection, albeit attenuated since the rate does not vary between Single Tandem (far end - short, medium, and long) points of handover. We consider that this incentive structure strikes a fair balance between the parties and is in line with the objective of aligning retail prices for 0870 calls with those for geographic calls.

**Table 1: Maximum Day (D), Evening (E) and Weekend (W) 0870 NTS termination charges, pence per minute<sup>6</sup>**

| <i>Point of handover (described in terms of the origination service on BT’s network prior to handover)</i> | D    | E    | W    |
|--|------|------|------|
|  | 0.67 | 0.31 | 0.25 |

<sup>6</sup> Single Tandem (far end – short, medium and long) points of handover refer to the last Single Tandem switch at which traffic is handed over to the TCP, after the call has been conveyed past the first Single Tandem point of handover and conveyed using short, medium or long Inter-Tandem Conveyance or Transit. The equivalent terminology, as referred to in the NTS calculator, is double tandem short, medium and long (see [www.btwholesale.com](http://www.btwholesale.com)).

|                       |      |      |      |
|-----------------------|------|------|------|
| DLE                   |      |      |      |
| 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 |

- 1.26 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. Ofcom's consideration of responses to the draft Determination and conclusion are set out in section 5. Ofcom's analysis and reasoning for this decision is set out in section 7.



## 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")<sup>7</sup>. 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

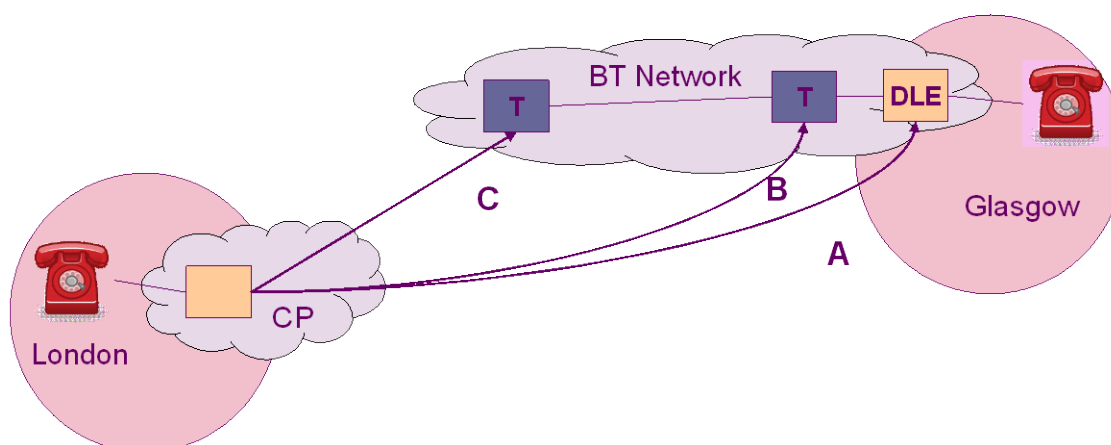
- 2.7 For a given NTS call, there can be several different CPs involved in conveying the call from the caller to the organisation or individual receiving the call (referred to in the following discussion as the "NTS service provider (NTS SP)", e.g. a retailer, information service like NHS Direct etc). 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.

---

<sup>7</sup> 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 below 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.<sup>8</sup> OCPs normally carry calls on their own networks and deliver them to the TCP as close to their ultimate

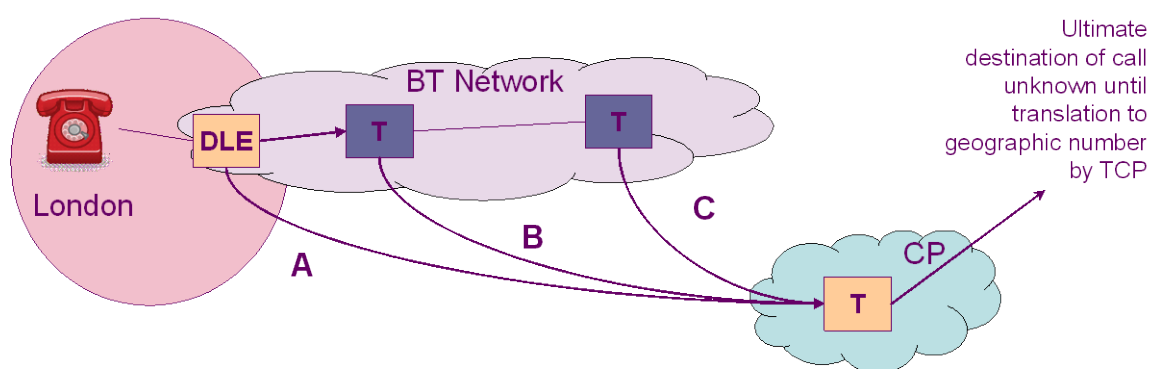
<sup>8</sup> Strictly speaking, when BT acts as a TCP it levies a ladder of interconnection charges, and under the reciprocity arrangements, other TCPs also levy the same ladder of charges at the same rates as charged by BT. The reciprocity arrangements stem from the fact that charges for fixed geographic 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](http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ccases/closed_all/cw_890/determination.pdf)

(geographic) destination as possible, in order to maximise the use of their own 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:

- a) 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 BT as the TCP.
- b) 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.
- c) 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:

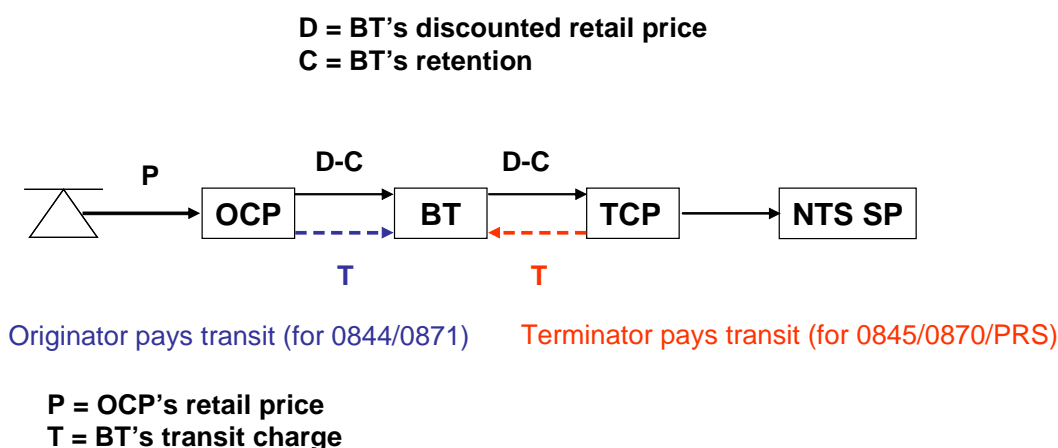
- a) Corresponding to DLE origination by OCP: where a TCP that has a large network picks up the call early from the DLE and carries the call to the point of translation, resulting in the highest termination charge paid to the TCP.
- b) Corresponding to ST origination by OCP: where a TCP picks up the 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.
- c) 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 relevant market: 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 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(1) of the Communications Act 2003 (the 2003 Act) sets out Ofcom's principal duty in carrying out its functions, which includes furthering the interests of consumers in relevant markets, where appropriate by promoting competition. 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:

- 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 decision under the Competition Act 1998, *NCCN 500*.<sup>9</sup> 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 monopolist<sup>10</sup> 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:

---

9

[http://www.ofcom.org.uk/bulletins/comp\\_bull\\_index/comp\\_bull\\_ccases/closed\\_all/cw\\_823/NCCN\\_500.pdf](http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ccases/closed_all/cw_823/NCCN_500.pdf)

<sup>10</sup> 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](http://www.ofcom.gov.uk/shared_ofcom/business_leaflets/ca98_guidelines/ofcom403.pdf)

- 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;
- given consumer sensitivity, service providers (SPs) 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;<sup>11</sup>
- given that little additional cost need be incurred to terminate calls on additional number ranges (at least in the case of voice calls<sup>12</sup>), 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;<sup>13</sup> 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.<sup>14</sup> Hence even if an NTS termination/hosting business was to stop providing 0870 termination/hosting

---

<sup>11</sup> *NCCN 500*, paragraph 4.103

<sup>12</sup> 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.

<sup>13</sup> *NCCN 500*, paragraph 4.106.

<sup>14</sup> Ofcom notes there may be some barriers to expansion within a number range for smaller TCP's due to interconnections costs – see *NCCN 500*

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.

## 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 TCPs 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 [X] % of all 0870 terminated minutes, and other large network TCPs<sup>15</sup> (in aggregate) terminated no less than [X] %, with remaining small operators having a relatively smaller aggregate share of no more than [X]%.<sup>16</sup> 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 equipment<sup>17</sup>

## 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;

<sup>15</sup> Cable & Wireless/Energis, Centrica, COLT, Easynet, Gamma Telecom, Global Crossing, Kingston, Ntl Opal, Telewest, THUS, Tiscali, Your Communications

<sup>16</sup> Ofcom estimate based on information request responses of BT and major altnets.

<sup>17</sup> 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 system<sup>18</sup> 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 Condition:** Ofcom confirmed that it would remove 0870 calls from the scope of the NTS Condition, which requires BT to originate and retail these calls on behalf of TCPs.<sup>19</sup> 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 calls<sup>20</sup>.

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

---

<sup>18</sup> 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

<sup>19</sup> 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.

<sup>20</sup> See [http://www.ofcom.org.uk/accessibility/rtfs/statements/archive06/nts\\_forward.rtf](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 used<sup>21</sup>) 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, retail charges or retail 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 Condition took account of the risk that leaving 0870 calls within the scope of the NTS 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

---

<sup>21</sup> See [http://www.ofcom.org.uk/accessibility/rtfs/statements/archive06/nts\\_forward.rtf](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<sup>22</sup> 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 0870 ("the May 2008 Consultation")<sup>23</sup>. In the May 2008 Consultation 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:

---

<sup>22</sup> AIT is essentially telephony traffic which is fraudulent or has no apparent legitimate commercial purpose.

<sup>23</sup> <http://www.ofcom.org.uk/consult/condocs/0870calls/0870condoc.pdf>

- **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 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 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*<sup>24</sup> (“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 Obligation<sup>25</sup> 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

---

<sup>24</sup> <http://www.ofcom.org.uk/consult/condocs/0870calls/0870statement/>

<sup>25</sup> [http://www.ofcom.org.uk/consult/condocs/end\\_to\\_end/statement/](http://www.ofcom.org.uk/consult/condocs/end_to_end/statement/)

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.

## 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.<sup>26</sup>

### 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:

---

<sup>26</sup> 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**

| <b>(i) New termination payments for 0870 calls - BT originated traffic</b>  |                 |               |               |               |
|---|-----------------|---------------|---------------|---------------|
| 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        |
| <b>(ii) New termination payments for 0870 calls - Transit traffic (excluding bespoke agreements made by other network operators and TCPs)</b> |                 |               |               |               |
| 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<br>ppm |         |         |
|-----------------------------|--|-------------------------------------|---------|---------|
| CP                          | Interconnection point  | Day                                 | Evening | Weekend |
| <b>BT (OCP)</b>             | 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  |
| <b>THUS</b>                 | DLE Termination  | [ ✕ ]                               | [ ✕ ]   | [ ✕ ]   |
|                             | ST Termination   | [ ✕ ]                               | [ ✕ ]   | [ ✕ ]   |
|                             | DT - Short   | [ ✕ ]                               | [ ✕ ]   | [ ✕ ]   |
|                             | DT - Medium  | [ ✕ ]                               | [ ✕ ]   | [ ✕ ]   |
| <b>Band-X</b>               | DT - Long  | [ ✕ ]                               | [ ✕ ]   | [ ✕ ]   |
|                             | DLE Termination  | 1.37                                | 0.63    | 0.49    |
|                             | ST Termination   | 1.48                                | 0.68    | 0.53    |
| <b>Cable &amp; Wireless</b> |  | [ ✕ ]                               | [ ✕ ]   | [ ✕ ]   |
|                             | ST Termination [Base rate (DTS)]                                       |                                     |         |         |
|                             | DLE Termination [At DLE (Base + LTC)]                                  | [ ✕ ]                               | [ ✕ ]   | [ ✕ ]   |
|                             | ST Termination (Transit) [Incoming transit (Base)]                     | [ ✕ ]                               | [ ✕ ]   | [ ✕ ]   |
| <b>FlexTel</b>              | ST Termination (Half- Transit) [Direct from OLO (Base + half transit)] | [ ✕ ]                               | [ ✕ ]   | [ ✕ ]   |
|                             | ST Termination   | 4                                   | 4       | 4       |
| <b>IVResponse</b>           | ST Termination   | 1.5                                 | 1.5     | 1.5     |

Note: [ ✕ ] A non-confidential draft determination was sent to the parties on 16 November 2007 and published on Ofcom's website on 19 November 2007.

3.14 Consistent with Ofcom's decision in its dispute determinations on fixed to mobile and mobile to mobile termination<sup>27</sup>, in deriving the termination charges proposed in the

<sup>27</sup> [http://www.ofcom.org.uk/bulletins/comp\\_bull\\_index/comp\\_bull\\_ccases/closed\\_all/cw\\_942/](http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ccases/closed_all/cw_942/)

2007 draft determination, we applied a gains from trade (GFT) test. In assessing BT's gains from trade, we considered whether the disputed charges might facilitate undesirable arbitrage which would have an effect on BT's gains from trade.

- 3.15 Most<sup>28</sup> 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.
- 3.16 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.
- 3.17 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.
- 3.18 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.

**Table 4: Updated alternative proposed termination charges for 0870 calls**

|    |                                  | proposed termination charges<br>ppm |         |         |
|----|----------------------------------|-------------------------------------|---------|---------|
| CP | Interconnection point            | Day                                 | Evening | Weekend |
| BT | "Proposed standard + LTC"        | 0.3648                              | 0.1794  | 0.1418  |
|    | "Proposed standard"              | 0.2492                              | 0.1265  | 0.1001  |
|    | Transit traffic – ST termination | 0.2657                              | 0.1249  | 0.1003  |
|    | IV Response                      | ST                                  | [ < ]   | [ < ]   |
|    | FleXtel                          | ST                                  | 4       | 4       |
|    | Invomo                           | ST                                  | 1.37    | 0.63    |
|    | DLE                              | 1.48                                | 0.68    | 0.53    |

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

- 3.19 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

<sup>28</sup> BT, Cable & Wireless, COLT Telecommunications, Carphone Warehouse. See [http://www.ofcom.org.uk/consult/condocs/0870\\_dispute/responses/](http://www.ofcom.org.uk/consult/condocs/0870_dispute/responses/)



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”<sup>29</sup>.

### Information sought by Ofcom

- 3.20 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.
- 3.21 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.
- 3.22 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.
- 3.23 On 18 December 2007, we announced that we were suspending consideration of this dispute pending the CAT’s judgment in an other case. Following the publication of the CAT’s judgments of 20 May 2008 and 15 August 2008, we reopened our consideration of this dispute. 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.
- 3.24 We sent information requests under Section 191 of the 2003 Act to IVResponse, Cable & Wireless, Thus, Syntec Ltd, Cheers International Telecom Ltd, TelXL Ltd, 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.
- 3.25 On 7 November 2008, we wrote to the remaining TCPs who are party to this dispute inviting them to provide similar information.
- 3.26 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

---

<sup>29</sup> Email from Cable & Wireless to Ofcom 20 October 2008.

has undertaken to quantify the risk of AIT and arbitrage 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.

- 3.27 We published a draft Determination for resolving the dispute on 23 April 2009 and invited comments from the parties to the dispute and other stakeholders by 7 May 2009.
- 3.28 In response to the draft Determination, comments were received from a number of parties<sup>30</sup>. These comments have been taken into account in making the final Determination. Summaries of the non confidential responses and Ofcom's comments to those responses are set out in section 4.

---

<sup>30</sup> All non-confidential responses are published on Ofcom's website at <http://www.ofcom.org.uk/consult/condocs/resolve0870calls/responses/>

## 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.
- 4.3 The following discussion may not summarise specifically every point made by the parties in their submissions. Nevertheless, Ofcom has considered all the views of the parties in determining this dispute.

## Circuit charges

- 4.4 The circuits in question are the interconnection circuits connecting BT's network to the TCP's network.
- 4.5 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 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.
- 4.6 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.

- 4.7 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)**

- 4.8 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.
- 4.9 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.
- 4.10 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”
- 4.11 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.
- 4.12 Opal 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.
- 4.13 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**

- 4.14 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.<sup>31</sup> 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.

---

<sup>31</sup> Change from NTS routing principle of near-end handover to a fixed geographic routing principle of far-end handover arrangements.

- 4.15 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 Warehouse submitted that the appropriate points of interconnection should be determined so as to encourage the deepest point of interconnection with BT’s network.
- 4.16 Invomo, Cable & Wireless and Carphone Warehouse submitted that the TCP should determine the point of interconnection.
- 4.17 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**

- 4.18 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**

- 4.19 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.
- 4.20 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**

- 4.21 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.
- 4.22 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.

- 4.23 THUS submitted that calls which use fewer BT network elements should have a higher 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.
- 4.24 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

- 4.25 [X] has said that moving away from revenue-sharing for 0870 calls would [X]
- 4.26 [X], [X] and [X] 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.
- 4.27 TCPs providing international call services on 0870 numbers (such as [X], [X] and [X] [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.
- 4.28 Some TCPs have said that existing 0870 services would have to be withdrawn at the charges proposed by BT.

#### Medium charges as proposed by [X] and Invomo

- 4.29 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.
- 4.30 [X] and [X] have said that they would [X].
- 4.31 [X] submitted that [X] They further submitted that if reciprocal 0870 termination charges at these levels are enforced [X]
- 4.32 [X] submitted that the charges proposed by Invomo reflected the closest to a fair balance between the parties, [X] and confusion amongst their customers.

#### High charges as proposed by FleXtel

- 4.33 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.
- 4.34 [X].
- 4.35 [X] submitted that [X] They submitted that all the proposed charges but FleXtel's are flawed.

#### Geographic charges

- 4.36 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).

- 4.37 [X] 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, [X]
- 4.38 [X] 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. [X] and [X] submitted that geographic termination charges do not reflect the additional network usage caused by delivery on a near-end handover basis. [X] 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.<sup>32</sup>
- 4.39 [X] 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”.
- 4.40 [X] submitted that setting 0870 termination charges at the same level as geographic charges [X]

### **Identification of relevant benchmarks**

- 4.41 [X] 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.
- 4.42 [X] submitted that an appropriate benchmark for assessing reasonableness is the pricing applied to 03 numbers which retail at geographic charges.
- 4.43 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.

---

<sup>32</sup> 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 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.<sup>33</sup> 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.<sup>34</sup> 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.<sup>35</sup>
- 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 below<sup>36</sup>. Key among them are those concerned with consumer interests and the promotion of competition.
- 5.14 Ofcom also exercises its regulatory functions according to the following regulatory principles:

---

<sup>33</sup> 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.

<sup>34</sup> Section 4(11) of the 2003 Act.

<sup>35</sup> Section 3(6) of the 2003 Act.

<sup>36</sup> 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.

- 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 2003 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 2003 Act which are relevant to this dispute?

### **Step (iii) – Ofcom’s own 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 have therefore gone on to consider what the appropriate termination charges should be to resolve the dispute.
- 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 our 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 our 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).<sup>37</sup>
- 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 geographic terminating traffic which was terminated via these methods during March 2007<sup>38</sup>.

---

<sup>37</sup> [http://www.catribunal.org.uk/files/Judgment\\_TRDs\\_200508.pdf](http://www.catribunal.org.uk/files/Judgment_TRDs_200508.pdf), paragraphs 175 onwards.

<sup>38</sup> BT’s dispute referral 6 July 2007

- 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 Table 4 above.

### Views of the parties

- 6.11 In its response to the 2008 consultation on 0870<sup>39</sup>, 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] but 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

---

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

- outpayments which may under current revenue sharing arrangements be made by the TCP to an SP.
- 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 Commission<sup>40</sup> and have subsequently been used by Ofcom in analysing various pricing issues.<sup>41</sup> 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,

---

<sup>40</sup> *Telephone Number Portability: A Report on a reference under s13 of the Telecommunications Act 1984* (MMC, 1995).

<sup>41</sup> 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*

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 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 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.<sup>42</sup> 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".

---

<sup>42</sup> 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 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 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 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.<sup>43</sup> 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.

---

<sup>43</sup> This point was confirmed by conversations with [redacted], [redacted] and [redacted] 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.

While few communication providers will have balanced traffic flows with BT<sup>44</sup> so that the net effect of changing responsibility from TCP to OCP will be approximately zero, there is likely to be some counterbalancing effect to mitigate the impact.

- 6.47 We also note that although 0870 call volumes remain material, they have fallen significantly in recent years - approximately [X] % 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 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 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 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. While this may not remove re-routing incentives, it may serve to reduce them.
- 6.51 In conclusion, we consider it unlikely that there will be mass circuit rearrangements, incurring significant costs 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 offset each other to some degree;
  - the decline in 0870 traffic; and
  - the new "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

---

<sup>44</sup> Respondent B commented in response to the draft determination that, in respect of NTS services, CPs tend to be skewed towards either origination or termination.

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 of aligning retail prices. 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.<sup>45</sup>

### Outpayments

- 6.59 Under current revenue sharing arrangements, the TCP may make an outpayment to an SP in respect of 0870 calls from the revenues it receives for those calls. This outpayment is determined by competition in NTS hosting. 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:
- a) the costs which would be incurred by the TCP to terminate an equivalent geographic call under “far-end handover” arrangements

---

<sup>45</sup> 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.

- b) the additional conveyance costs incurred by the TCP to terminate an 0870 call arising from “near-end handover”
- c) 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

6.61 BT’s proposed charges make an allowance for (a). However, in our view BT’s proposed charges do not make reasonable allowance for near end handover (b) (see paragraphs 7.25, 7.31-7.33). Furthermore, BT’s proposal makes no allowance for interconnection circuit costs. Our 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. 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 would allow retail prices to be aligned with geographic call charges would 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 would 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 would enable BT to align retail prices for 0870 calls with geographic rates. The cheaper calls and enhanced transparency that would result would be in the interests of consumers originating calls on BT's network. However, BT's proposed termination rates for 0870 calls would operate to the disadvantage of TCPs and their customers, by reducing the size of termination payments. Cable & Wireless, 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% and 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 considered 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 [redacted] 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 [redacted] and [redacted] 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 [redacted] and [redacted]) have said that [redacted]. 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, THUS46, 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 6.152 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;

---

<sup>46</sup> Though these have been withdrawn.

- the proposed charges would result in [ X].

### **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. BT has informed us that they may review the pricing and/or features of their flat-rate consumer calling packages in light of the termination charges that will prevail upon the resolution of this dispute.

### **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.
- 6.87 We asked BT, first, whether such an option would be technically possible<sup>47</sup>. 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.<sup>48</sup> 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.

---

<sup>47</sup> BT's response to our November 2009 information request.

<sup>48</sup> 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](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](http://www.competition-commission.org.uk/appeals/communications_act/mobile_phones_determination.pdf)

- 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 [ ]% (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 concluded that a single ladder of charges payable to all the TCPs which are party to this dispute is appropriate.

## Step (ii) – conclusion

- 6.92 Table 13 in section 8 below 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.<sup>49</sup> 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 [ ]
- 6.95 [ ].

<sup>49</sup> 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.

- 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 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) – Ofcom's own 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 must resolve the dispute by determining the appropriate termination charges. In assessing what those charges might be, we have had regard to the following factors<sup>50</sup>:
- 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 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

---

<sup>50</sup> [http://www.catribunal.org.uk/files/Judgment\\_TRDs\\_200508.pdf](http://www.catribunal.org.uk/files/Judgment_TRDs_200508.pdf), paragraphs 175 onwards

- 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:

- a) The costs which would be incurred by the TCP to terminate an equivalent geographic call under "far-end handover" arrangements;
- b) The additional conveyance costs incurred by the TCP to terminate an 0870 call arising from "near-end handover"; and
- c) 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.

6.105 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.<sup>51</sup> 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.

6.106 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).

6.107 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

6.108 We have looked at two approaches to estimating the near-end adjustment, which generated two candidate sets of rates for resolving this dispute:

---

<sup>51</sup> Ofcom has consulted 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/](http://www.ofcom.org.uk/consult/condocs/review_bt_ncc/).

- **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.

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

6.110 A further consideration is the need to ensure that AIT and arbitrage do 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 and arbitrage.

6.111 Option 1 is set out at paragraphs 6.112 to 6.142 below. Option 2 is set out at paragraphs 6.143 to 6.145 below. The no-arbitrage ceiling is set out at paragraphs 6.146 to 6.150 below.

#### Option 1: Incremental cost approach

6.112 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).

6.113 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)<sup>52</sup> 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.

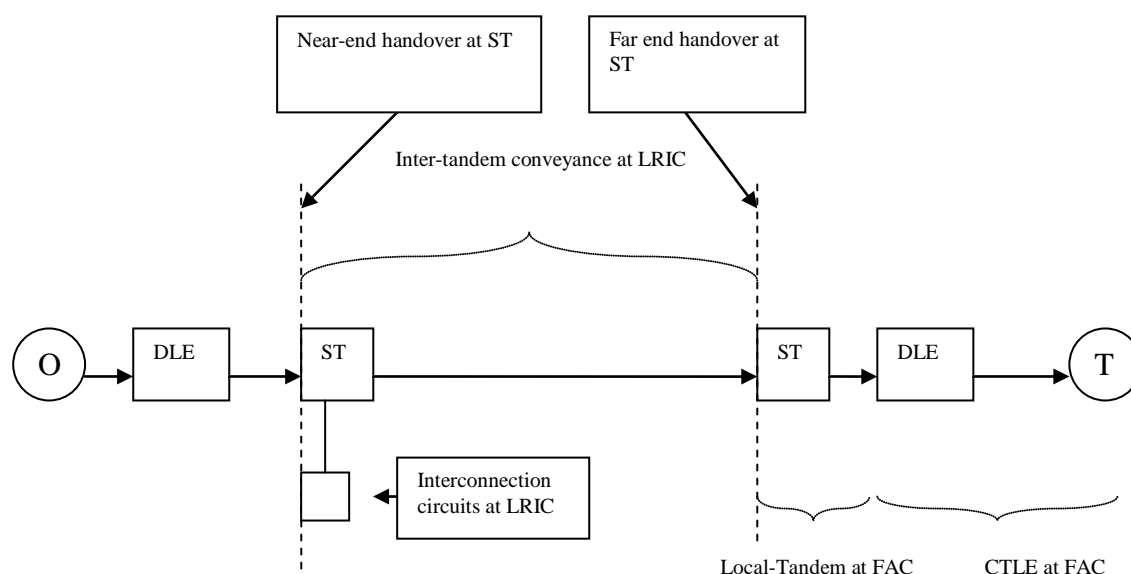
6.114 Note that these additional costs are costs which would have been borne by the OCP in the case of a far-end-handover call. If a call from BT to a TCP is made using near-end handover rather than far-end-handover, BT as OCP will generally require less inter-tandem conveyance capacity. The cost which 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

---

<sup>52</sup> Marginal cost is a special case of incremental cost with an increment of 1 unit of output.

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.

**Figure 4: Incremental cost approach**



6.115 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.

6.116 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 the context of 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:

- a) Using LRIC:FAC ratios based on BT accounting data;
- b) Applying cost-volume elasticities to FAC; and
- c) A rule of thumb that LRIC is approximately 50% of FAC.

6.117 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.

6.118 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*.

- 6.119 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.
- 6.120 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.
- 6.121 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.
- 6.122 Ofcom considers that this approach offers a reasonable guide to the incremental routing costs for a network operator.
- 6.123 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.<sup>53</sup> 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.
- 6.124 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.
- 6.125 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 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-

---

<sup>53</sup> 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.



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 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.

- 6.126 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.
- 6.127 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

- 6.128 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).
- 6.129 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.

- 6.130 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.
- 6.131 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).
- 6.132 This provides a "ST baseline" for the calculation of the appropriate termination rate at the near-end.
- 6.133 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).
- 6.134 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.
- 6.135 Accordingly, we are of the view that the ST baseline should be adjusted according to the point of handover, in order to ensure our 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.
- 6.136 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 6.113, 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).
- 6.137 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.

- 6.138 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.
- 6.139 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.
- 6.140 Accordingly, taking account of the need for the 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.
- 6.141 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

- 6.142 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 |

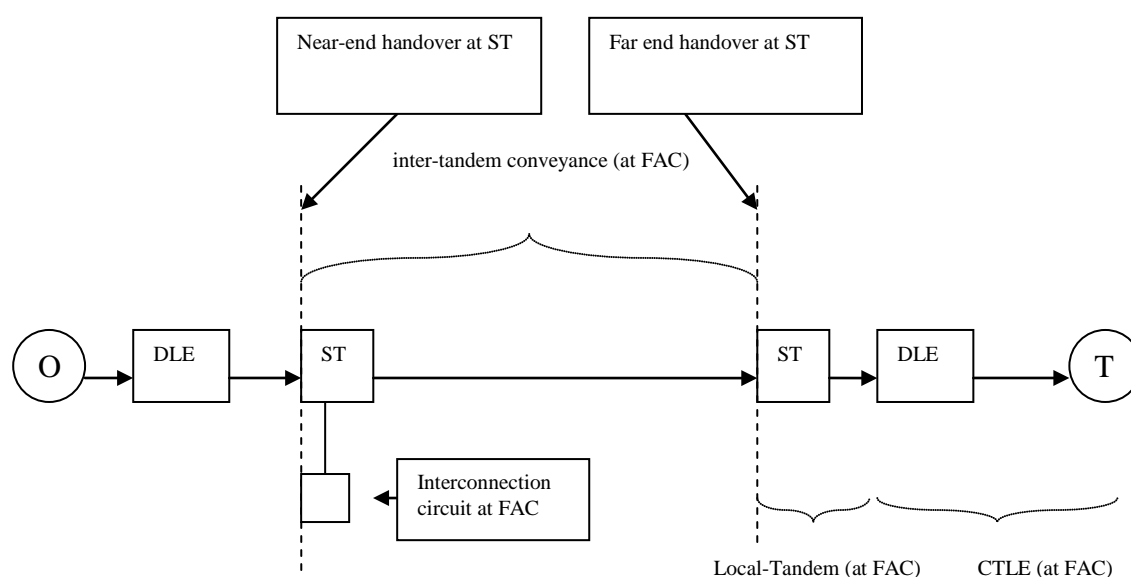
### Option 2: Fully allocated cost approach

6.143 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.

6.144 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 regulated<sup>54</sup> 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.

<sup>54</sup> 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**



6.145 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 6.123 to 6.128 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. Figure 11 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 |
|-------------------|------|------|------|

### Cross-check: arbitrage ceiling

- 6.146 Ofcom's concern in removing 0870 calls from the scope of the NTS Condition was to ensure that outpayments made by TCPs through revenue sharing were below a level that would encourage AIT and 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.
- 6.147 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.
- 6.148 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.
- 6.149 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)
- 6.150 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>                           | <b>D</b> | <b>E</b> | <b>W</b> |
|--|----------|----------|----------|
| weighted geographic routing costs (ST point)         | 0.34     | 0.16     | 0.12     |
| number translation (network)                         | [ ✕ ]    | [ ✕ ]    | [ ✕ ]    |
| number translation (retail)                          | [ ✕ ]    | [ ✕ ]    | [ ✕ ]    |
| arbitrageur costs                                    | 0.12     | 0.12     | 0.12     |
|  |          |          |          |
| <b>Single Tandem no-arbitrage ceiling (near-end)</b> | 0.68     | 0.46     | 0.42     |

Source: Ofcom calculations (see Annex 4)

### Identifying options: conclusion

6.151 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**

6.152 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.”

6.153 Ofcom has therefore considered whether there are any relevant benchmarks against which the 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 account<sup>55</sup>. In their responses to our information requests, the parties have identified a number of potentially relevant benchmarks which are considered below.

6.154 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.”

6.155 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

---

<sup>55</sup> 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.

- 6.156 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.
- 6.157 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 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.
- 6.158 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.
- 6.159 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.
- 6.160 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 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.

- 6.161 Although [X], 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.
- 6.162 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

- 6.163 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)**

|   | <b>D</b> | <b>E</b> | <b>W</b> |
|---|----------|----------|----------|
| 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     |

- 6.164 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

- 6.165 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

- 6.166 Under this option, the 0870 termination charges we are determining are at a level that is below the no-arbitrage ceiling and at a level 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 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

- 6.167 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 determined 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.
- 6.168 While the charges under this option are at a level which some [ < ], 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.
- 6.169 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.
- 6.170 We are therefore satisfied that the rates determined 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

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

- 6.173 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.
- 6.174 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 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

- 6.175 As discussed at paragraphs 6.146 to 6.150, 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.
- 6.176 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.
- 6.177 As regards Ofcom's statutory objectives and Community requirements, the no-arbitrage ceiling would, like Ofcom's 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 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.

- 6.178 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

- 6.179 In view of the assessment above, we are satisfied that the determined rates 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 conclusion

- 6.180 For the reasons set out in the previous section, Ofcom's 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 6 above.

- 6.181 Finally, this document clearly sets out the parties' arguments and Ofcom's reasoning that leads to this conclusion. We also note the opportunities that the parties have had to comment on Ofcom's policy proposals in relation to 0870. They also had an opportunity to comment on the specific termination rates proposed in the draft determination. Accordingly, we consider that the rates determined in this dispute are transparent, accountable, proportionate, consistent and targeted.

- 6.182 The applicable rates under Option 2 are summarised in Table 11.

**Table 11: Range of 0870 NTS termination charges for various points of handover (ppm) determined by Ofcom**

| <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 |

## Section 7

# Consideration of responses to the draft Determination and conclusion

## Summary of responses

7.1 Ofcom received responses to the draft Determination from the following parties to the dispute:

- BT;
- Cable & Wireless;
- Easynet;
- FleXtel Ltd (“FleXtel”);
- Gamma Telecom Limited (“Gamma”);
- IVResponse Ltd (“IVResponse”);
- Magrathea Telecommunications (“Magrathea”);
- Respondent A who asked not to be named (“Respondent A”)( [ 3<]); and
- TelXL Limited (“TelXL”);

7.2 In addition, Ofcom received responses from the following third parties:

- the Federation of Communications Services (FCS);
- Lexgreen Services Ltd (“Lexgreen”);
- Respondent B who asked not to be named (“Respondent B”)( [ 3<]); and
- 44 NTS service providers, including individuals, small businesses and not-for-profit organisations all using 0870 numbers.

7.3 Non-confidential responses can be found at:  
<http://www.ofcom.org.uk/consult/condocs/resolve0870calls/responses/>

7.4 BT considers that “BT’s proposed termination charges are the only charge structure which meets all of Ofcom’s principles of pricing and cost recovery in a fair and reasonable way”. However, it “believes that Ofcom’s proposed termination rates go some way to support Ofcom’s 0870 policy objectives to protect consumers by proposing a geographic based termination rate” and supports Ofcom’s view that rates proposed by other parties are too high. It also considers that they would have been “a considerable stimulus to AIT and arbitrage”. BT does not consider that other costs (over and above those incurred in geographic termination) should be recovered solely from the OCP, but should “be balanced between the OCP and the TCP’s SP

customer BT has made other comments on our methodology to determine the appropriate rates.

- 7.5 Cable & Wireless welcomes Ofcom's view that BT's proposed rates are not reasonable. Although it accepts that Option 2 (FAC) is the more appropriate of the cost bases considered, and supports Ofcom's findings in relation to responsibility for additional costs, it argues that the Option 2 rates do not strike a fair balance between the parties in that they favour the OCP. Cable & Wireless also submitted comments on our methodology for determining the appropriate rates, in particular on the no-arbitrage ceiling.
- 7.6 Easynet and Gamma are broadly supportive of our proposals.
- 7.7 Respondent A notes that the rates proposed are twice as high as those originally proposed by BT and argues that this will undermine the ability of OCPs to price 0870 calls at geographic rates. It contends that the rates proposed by BT represent a fair and reasonable outcome to the dispute.
- 7.8 Other providers such as FleXtel, IVResponse, Magrathea, Lexgreen (a third party) and TelXL say that our proposed rates are too low [ 3<].
- 7.9 FCS submits that its members have expressed "very strong concern" at Ofcom's proposed rates, which FCS considers to be "below cost" for its members, and that the proposed rates may put smaller suppliers out of business.
- 7.10 Respondent B argues in favour of rates that are more closely aligned with geographic termination rates, although of the two options proposed in the draft Determination, it favours Option 1 (incremental cost).
- 7.11 A number of NTS SPs (users of 0870 numbers) that responded to the consultation said that their 0870 provider had told them that it was going to stop providing 0870 services as a result of Ofcom's decision. Many disagreed with Ofcom's decision to change regulation of 0870 numbers, arguing that they would incur costs communicating the change to their customers, at a difficult time for small businesses. Others pointed out that 0870 numbers are used by not-for-profit organisations with limited resources. Some considered that Ofcom had not given them sufficient time to implement the changes they would need to make. We address the NTS SP's comments about our policy changes at paragraphs 7.197.20 and their comments about the timing of the changes at paragraphs 7.127 to 7.130.
- 7.12 Respondents' comments are addressed below. First, we address comments on our overall approach to the regulation of 0870 numbers. Paragraphs 7.22 to 7.119 address respondents' comments on the methodology we used to calculate the appropriate rates for resolving this dispute, as set out at section 6 of this Determination. Comments not related to our methodology are considered at paragraphs 7.120 to 7.136 below.
- 7.13 Our conclusion is set out from paragraph 7.137 below.

### **Comments on the regulatory framework for 0870 numbers**

- 7.14 A number of respondents commented on Ofcom's changes to the regulation of 0870 numbers, as set out in the 2009 statement.

- 7.15 FleXtel considers that 0870 calls should be regulated as Premium Rate Services (as other 087 numbers will be from 1 August 2009), enabling termination rates to be set high enough to cover the termination costs of FleXtel and other TCPs that predominantly provide services to low volume customers and have no retail billing platform.
- 7.16 TelXL considers that the NTS Condition should still apply to the termination of 0870 calls, and that consumer concerns arising from the lack of pricing transparency should be addressed by enforcement of a 10p per minute price cap. Lexgreen also proposes retention of the NTS Condition.
- 7.17 As noted at paragraph 7.11 above, most of the NTS SPs that responded to the consultation urge Ofcom to reconsider the changes to the regulation of 0870 numbers as set out in the 2009 statement.
- 7.18 Some respondents question, or ask Ofcom to clarify, statements it had made in the 2009 Statement.

### **Ofcom's response**

- 7.19 In the September 2005 Consultation (and the October 2004 Consultation<sup>56</sup> that preceded it) we considered a range of options (including the retention of the NTS Condition) to address its policy objectives for 08 numbers. After considering stakeholders' comments, we decided to implement our proposals for 0870 numbers in the NTS Statement and the 2009 Statement, for the reasons set out in those documents.
- 7.20 The draft Determination did not invite further comment on the changes to the regulatory framework for 0870 calls, which will take effect on 1 August 2009. While we recognise that many stakeholders remain concerned about the changes to 0870 regulation, it is not within the scope of this dispute determination to address concerns about changes notified in the 2009 Statement. We have not, therefore, addressed comments on the 2009 Statement and alternative policy options in this determination.
- 7.21 Given that the policy as to the appropriate regulation for 0870 calls has been decided, proposals for termination rates (such as those from FleXtel, TelXL and Lexgreen) which are dependent on alternative regulatory structures (for example the retention of the NTS Condition) are not viable.

### **Comments on Ofcom's methodology**

#### **Geographic call termination costs**

- 7.22 BT and several TCPs which are party to the dispute accept that the cost of far-end single tandem termination for geographic calls provides a starting point for the calculation of termination costs for 0870 calls.
- 7.23 Magrathea submits, however, that the correct figure for calculating the termination rate for 0870 calls for far-end handover should not be the cost of far end single tandem termination for geographic calls but an average of double tandem short and single tandem.

---

<sup>56</sup> <http://www.ofcom.org.uk/consult/condocs/ntsoptions/>



## Ofcom's response

- 7.24 To take account of additional conveyance costs which the TCP incurs when the call is handed over at the near-end, we applied an 0870 traffic profile to derive the Single Tandem (near-end) rate (see Table 26 - Table 29 below). We considered that there are no grounds for making an adjustment for inter-tandem conveyance, however, where an 0870 call is handed over at the far end, as Magrathea appears to suggest, as this would not be consistent with our objective of aligning 0870 and geographic prices. In these circumstances, the appropriate termination rate is a rate based on the equivalent geographic rate for ST termination, which reflects the costs actually incurred by the TCP.

## Comments on Ofcom's treatment of additional conveyance costs

- 7.25 BT submits that its proposed charges already take into account near-end handover, and that Ofcom has over calculated "extra conveyance costs".
- 7.26 Respondent A submit that:
- "the UK interconnection regime relies on the principle that the operator who pays for the call conveyance should be able to minimise that cost. Under the Standard Interconnect Agreement, it is the terminating operator who is responsible for the non-geographic traffic and consequently chooses the point of handover. Ofcom is not proposing to change this principle. This means that the originating operator pays for terminating 0870 calls but has no way of minimising this payment by choosing to carry the calls as far as possible in its network and using far-end handover."
- 7.27 Respondent A submits that this cannot be fair and reasonable from the perspective of the OCP.
- 7.28 Lexgreen states that "it is wrong for Ofcom to consider that any efficient operator would have many points of interconnection" and considers that this policy discriminates against smaller operators.
- 7.29 Magrathea considers that Ofcom is wrong to allow only the efficiently incurred costs of termination based on a fully interconnected network TCP (see paragraph 2.22 of the draft Determination), arguing that it is an efficient operator and only interconnects at [X] nodes. Magrathea submits that it is not the case that an 0870 call will travel the shortest possible path following handover to the TCP's network. Instead, it states, an 0870 call would often travel over a long distance twice (Glasgow to London to Glasgow), once for translation and then for termination. Magrathea submits that Ofcom's proposed rates do not allow for this.
- 7.30 Lexgreen notes that many EU businesses use 0870 numbers to establish themselves within the UK. It considers that termination rates "should therefore allow for the operators running them to receive sufficient revenue to allow for the onward conveyance to any fixed line within any Member State of the EU".

## Ofcom's response

- 7.31 We note BT's comment that its proposed charges already take into account the costs of near-end handover. BT has explained that its proposed "standard charge", which it regards as appropriate for "near end handover", is based on the average termination

costs of geographic calls but with an adjustment to remove the costs of any local-tandem conveyance used. To get what it refers to as the “far-end handover” charge, BT adds only the cost of local-tandem conveyance. BT therefore seems to use the term “far-end handover” to refer to situations where BT’s network is not used for local-tandem conveyance which is presumably therefore self-supplied by the TCP to the extent needed.

- 7.32 Our understanding is that payments for termination of geographic calls will reflect the principle of “far-end handover”. This is because, in the case of geographic calls, the OCP knows the final destination of the call and can minimise termination payments to TCPs by maximising use of its own network, only handing the call to the TCP at the point of connection nearest the destination – hence the term far-end handover. Both BT’s “standard” and “standard plus LTC” rates therefore seem to reflect far-end handover, on this interpretation. We use the term “near-end handover” to describe the situation where NTS calls are handed to the TCP at the first point of connection, which is appropriate since the ultimate destination of the call is not known until translation is carried out by the TCP. This results in some additional costs for the TCP which BT does not appear to allow for.
- 7.33 We therefore remain of the view that BT’s proposed rates are too low, for the reasons set out in paragraph 6.81.
- 7.34 We do not consider that OCPs would, as suggested by Respondent A, seek to convey an 0870 call over their own network for as long as possible, up to the point of far end handover, that is, the last tandem switch nearest to the destination of the call. Because the destination of the 0870 call is not known until the number is translated after handover to the TCP, it is in the interests of the OCP to hand over 0870 traffic as soon as possible (i.e. the near end) to reduce total conveyance costs.
- 7.35 As Respondent A noted, our proposal is that TCPs will choose the point at which 0870 traffic is handed over to the TCP. However, under our proposal, the OCP is able to choose whether to use a transit operator and, if so, where to connect to the transit operator’s network. The concern of Respondent A may therefore relate to transit costs since it is these costs which could be minimised by “conveying the call as far as possible on [the OCP’s] own network”.
- 7.36 Our determination that OCPs should bear the cost of transit reflects the approach to align 0870 calls to geographic calls (where the OCP currently bears the cost of transit). In considering who should bear responsibility for transit costs, we had regard to a number of key cost recovery principles, including cost causation, practicality and effective competition in addition to cost minimisation as set out in paragraphs 6.39 to 6.52. We therefore believe that the OCP is able to minimise costs (for a given point of handover to the TCP) by using transit and its own network in an efficient way.
- 7.37 We have also had regard to ensuring effective competition, by providing incentives for TCPs to interconnect efficiently with BT by providing a ladder of termination rates that incentivises interconnection with BT at a reasonably efficient point of handover. This is achieved through a higher termination rate at the near end ST point of handover than compared to far end handover – the TCP is incentivised to choose the near-end handover if its additional costs on its own network compared to far-end handover are less than the price differential (which reflects the difference in conveyance costs on BT’s network).
- 7.38 Ofcom is therefore satisfied that retaining TCPs’ responsibility for choosing the point of handover, and reflecting in the determined rates the additional costs associated

with near-end handover, is consistent with relevant cost recovery principles, including cost minimisation.

- 7.39 In response to Lexgreen's and Magrathea's comments relating to the number of points of connection, it is appropriate that Ofcom only allows for the recovery of efficiently incurred call routing costs. Where TCPs are not fully interconnected, call routing costs will necessarily be higher since additional termination services will need to be bought in to convey calls to their destination point. In some cases, where an operator has few points of interconnection, this can lead to significantly increased traffic conveyance (including inefficient traffic routing referred to as 'tromboning', such as the Glasgow-London-Glasgow scenario described by Magrathea). To take account of these additional costs in the adjustment for near-end handover would be inconsistent with the effective competition and cost minimisation principles. The cost causation principle also suggests that these additional routing costs should be borne by the TCP. Finally, these additional costs are not incurred in the termination of geographic calls and, if included in the termination rate for 0870 calls, could prejudice the achievement of objective of re-establishing the link between charges for 0870 calls and geographic calls.
- 7.40 Likewise, we consider that the inclusion of costs associated with termination of 0870 calls in other EU Member States, as proposed by Lexgreen, would not be consistent with the objectives of Ofcom's 0870 policy of re-establishing the link between charges for 0870 calls and those for geographic calls. This is because the additional conveyance costs of terminating an international call are not incurred in the termination of (domestic) geographic calls, and can be quite significant. It is likely that 0870 calls would not be priced at the same level as geographic calls if termination rates were set at a level sufficient to cover the costs of termination in other EU Member States. In addition, TCPs which do not wish to bill SPs for additional costs not covered by the 0870 termination rates have the option of migrating to other NTS number ranges, where revenue-sharing remains available. As noted in paragraph 7.117 below, this applies equally to TCPs terminating 0870 calls in other EU Member States and they are also able to switch to an international number range.

### **Additional costs**

- 7.41 BT submits generally that additional costs associated with the termination of 0870 calls above those incurred in the termination of a geographic call should not be recovered solely from the OCP, and suggests that "additional costs attributed to 0870 termination, which Ofcom had determined should be borne by the call originator, could be passed on to the consumer". It considers that such costs are incurred to meet the needs of SPs and therefore should be recovered from them. Failing that, they should be balanced between the customers of each of the OCP and TCP. BT considers that passing these costs to the OCP could create a barrier to geographic pricing or act as a stimulus for arbitrage.
- 7.42 Gamma suggests as a general proposition that additional costs could be recovered from the owner of the number rather than the OCP.
- 7.43 Respondent B comments that, with the exception of TWIX (see below), Ofcom's proposed split of responsibilities for additional costs is a fair and reasonable solution in the context of the 0870 dispute.
- 7.44 FCS argues that the rates proposed by TCPs should be permissible "as long as Ofcom are satisfied that they contain legitimate costs". FCS notes that Ofcom considered the possibility of different rates for different TCPs but that Ofcom "was

immediately dissuaded” from this approach by BT’s comments about the impact of ported numbers (see paragraph 6.87 of the Determination).

- 7.45 Lexgreen submits that Ofcom has not taken into account “any further costs that are incurred when numbers are ported”.

### Circuit charges

- 7.46 BT agrees that the TCP should retain ownership and responsibility for interconnection circuits but argues that the costs associated with circuit ownership are driven by the requirements of SPs and so, consistent with the cost recovery principles, should be recovered from them.
- 7.47 Easynet supports Ofcom’s proposals that the TCP should remain responsible for interconnection circuits but be able to recover the costs from the OCP.

### TWIX

- 7.48 BT states that it is “relatively neutral” about the proposal that the OCP should be responsible for the TWIX but considers that it would increase its incentives to reconsider routing plans, which “will result in high levels of costly re-alignment of circuit arrangements”.
- 7.49 Respondent B also contends that switching responsibility for the TWIX from the TCP to the OCP could result in many instances of the OCP changing its routing arrangements in order to minimise transit charges, and questions the basis on which Ofcom reached its view that its proposals are in fact unlikely to lead to mass re-routing as BT’s comments suggest. In particular, Respondent B notes that Ofcom does not further explore its suggestion that the impact of this change would “net out” for many providers, and suggests that in fact “there are very few CPS who have balanced traffic flows” that would lead to such an outcome. Further, Respondent B contends that the incentives created by the ladder of charges will not necessarily mitigate the need for circuit rearrangements.
- 7.50 Respondent B submits that Ofcom does not explain how transit payments will be applied under its proposals, and is concerned that in certain transit scenarios “there could be double counting of the conveyance undertaken by BT in the course of conveying calls from the OCP to the TCP”. Respondent B notes that this is of particular concern given that Ofcom has proposed in its narrowband market reviews that BT no longer has SMP in any transit market.<sup>57</sup>

### IN DIP

- 7.51 IVResponse submitted that IN DIP is “a genuine cost element” that Ofcom appears to have disregarded in order to determine a rate “that will fit with BT’s marketing strategy.”

---

<sup>57</sup> Respondent B asks Ofcom to take into account the impact of its ongoing narrowband market reviews (see footnote 56). However, Ofcom has not published its final market review and NCC statements and we should not pre-judge the outcome by examining the impact of any changes that may be made as a result. In addition, as discussed at paragraph 7.65 below, it is not within the scope of this dispute to suggest what charges non-BT OCPs will pay for transit.

- 7.52 BT supports Ofcom's proposal that IN DIP costs should be the responsibility of the TCP.

## **Ofcom's response**

### Additional costs

- 7.53 As set out in section 6 above, we approached the issue of cost recovery by assessing each of the "additional" costs of terminating 0870 calls identified (over and above the costs of geographic call termination) against its six cost recovery principles, and also bearing in mind the policy objectives of aligning 0870 and geographic call charges. In relation to the four additional costs in dispute (see paragraph 6.15), we concluded that one (circuit charges) should be recoverable from the OCP through the termination charge, one (TWIX) should be borne by the OCP and two (IN DIP and outpayments) should not be recoverable through the termination charge.
- 7.54 We remain of the view that this approach does balance the interests of caller consumers and service providers and is consistent with the cost recovery principles, for the reasons set out below, and that it will enable OCPs to price 0870 calls at the same rate as geographic calls.
- 7.55 In response to FCS's concern that Ofcom ruled out different charges on the basis of BT's comments alone, we clarify that Ofcom rejected this option in the round, on the basis of the various factors set out at paragraphs 6.90 and 6.91 of the Determination.
- 7.56 Lexgreen submits that Ofcom should take into account additional costs associated with ported numbers. Lexgreen has not explained how number porting might affect the costs of 0870 termination. Further, this was not a cost category that was identified by the parties as being in the dispute. For these reasons, Ofcom considers that there are no grounds for considering an adjustment to take account of any such additional costs.

### Circuit charges

- 7.57 For the reasons set out in paragraphs 6.33 to 6.38 above, we are satisfied that recovery of the cost of circuit charges through the termination charge is consistent with the cost recovery principles. It also aligns origination costs of 0870 calls with those of geographic calls and thereby contributes to the policy objective of aligning retail charges for 0870 calls with those for geographic calls.

### TWIX

- 7.58 We note the comments by BT and Respondent B about the increased incentives for OCPs to change their routing arrangements in order to minimise their transit costs. However, none of the respondents, including BT or Respondent B, has provided evidence of actual consideration of a change to their routing arrangements, or explained the potential impact of such a change.
- 7.59 TCPs are currently responsible for transit charges for 0845 and 0870 traffic and OCPs for 0843/4 and 0871/2/3 traffic. As noted previously, we are not aware that this has led to different interconnection arrangements for those two groups of NTS traffic. On the contrary, we understand that in many cases the same interconnection capacity is used for all NTS calls. If that is not the case, where sufficient 0844/0871 capacity already exists, it may be possible to amend routing plans relatively easily

without the need for re-arrangements (particularly in the context of already declining volumes of 0870 calls and the likelihood that many providers will choose to migrate services currently provided on 0870 to other ranges).

- 7.60 We accept that, as suggested by Respondent B, the number of individual CPs whose traffic profiles are balanced such that the impact of this change would exactly “net out” is likely to be small. However, we consider that the impact will to some extent be mitigated for CPs that both originate and terminate 0870 traffic, even if net inflows and outflows are not exactly zero.
- 7.61 We also accept that the interconnection incentives of TCPs created by adopting the “ladder” of charges will not necessarily remove OCPs re-routing incentives.
- 7.62 However, for the reasons set out in paragraph 6.45 above, we remain of the view that it is unlikely that there will be mass circuit rearrangements incurring significant costs.
- 7.63 We therefore remain of the view that the TWIX should fall to the OCP.
- 7.64 In response to the concerns of Respondent B about the potential for over-recovery of transit costs, we noted that in this dispute we determined a termination rate to be paid by BT (as OCP) to TCPs for conveyance and termination. In respect of transit, where the network operator conveying the call is neither the OCP nor the TCP, we conclude that the OCP, rather than the TCP, is responsible for the transit charge. The OCP will decide whether or not to use a transit operator, not the TCP. If it does, it will contract with the transit operator and pay the transit charge. Since the TCP has no billing relationship with the OCP, it cannot seek any additional payments for transit. Ofcom does not therefore consider that transit charges could be recovered twice.
- 7.65 It is not within the scope of this dispute to suggest what charges non-BT OCPs will pay for transit.

### IN DIP

- 7.66 We recognise at paragraph 6.15 that IN DIP is a genuine cost element in the termination of 0870 calls. We have not disregarded it but have given careful consideration to whether it should be borne by the TCP or the OCP, as set out in section 6 above. On the basis that it is not a cost that is incurred in the termination of geographic calls, we consider that its recovery through the 0870 termination charge would be out of line with the termination charging arrangements for geographic calls and therefore risks the alignment of retail charges for 0870 calls with those for geographic calls. This is the policy objective of our 2009 Statement, which is intended to improve price transparency for the benefit of consumers and competition. It is open to the TCP to recover such costs from its own customers, the service providers.
- 7.67 While the decision that IN DIP costs should not be recovered from BT through the 0870 termination charge may fit with BT's current marketing strategy of including 0870 calls in its inclusive packages, it only does so because that strategy is in line with our policy objective as set out above.

### **Comments on the appropriate cost basis for calculating 0870 termination rates**

- 7.68 BT agrees that the termination rate for 0870 should be based on fully allocated costs (FAC).

- 7.69 Cable & Wireless prefers Option 2 (0870 charges reflective of FAC-based termination costs) to Option 1 (incremental cost) but nevertheless disagrees that it achieves a fair balance between the parties.
- 7.70 Gamma Telecom (while it supports Ofcom's proposals, given the need to avoid further delay in implementation) states that it would have preferred Option 1 (incremental cost).
- 7.71 Respondent B considered that the incremental cost approach "more closely represents a fair and reasonable termination charge that is also consistent with Ofcom's statutory duties and obligations. In particular, [...] it more accurately captures the incremental costs incurred by network TCPs in terminating 0870 calls"

### **Ofcom's response**

- 7.72 We concluded that Option 2 represents the outcome that is fair as between the parties to the dispute and reasonable in the light of our regulatory objectives, for the reasons set out in paragraphs 6.165 to 6.172.
- 7.73 As discussed at paragraph 6.174 of the Determination, adopting charges based on incremental cost (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. Those respondents favouring Option 1 have not provided any further comment that leads us to change this view.

### **Comments on Ofcom's no-arbitrage ceiling**

- 7.74 Cable & Wireless submits that:
- "the no-arbitrage model Ofcom has used is unrepresentative and consequently the ceiling Ofcom has set is too low to reflect those rates at which an unacceptable level of arbitrage is likely to occur."
- 7.75 Cable & Wireless comments on Ofcom's methodology for calculating the no-arbitrage ceiling and notes that the full interconnected network operator that Ofcom has modelled "is not the type of operator that would be seeking to exploit a short-term arbitrage opportunity".
- 7.76 Cable & Wireless also notes that although "BT's announcement of inclusive 0870 calls will have made the opportunity for arbitrage obvious to anyone seeking to profit from it", Cable & Wireless has not [ ✂ ], and submits that "[ ✂ ]"
- 7.77 Cable & Wireless further notes that "BT already has tools available to it to combat arbitrage other than Ofcom setting low termination rates for 0870", for example BT's recently introduced fair use policies and ongoing industry discussions around BT's AIT process.
- 7.78 Cable & Wireless asserts that "reducing termination rates on arbitrage grounds is an entirely disproportionate measure" and calls on Ofcom "to provide empirical evidence that any no-arbitrage ceiling is required rather than to base a decision on the hope that BT Retail will continue to price 0870 at geographic levels".

- 7.79 Respondent B submitted that “in establishing the arbitrage ceiling, Ofcom has underestimated the ingenuity and resourcefulness of arbitrageurs, thus leading to a ceiling that is set too high”, such that Option 2 rates “are too close to, or [...] could even be above, the arbitrage ceiling.”
- 7.80 BT considers that while Ofcom’s proposed rates “should reduce the risk of arbitrage, [...] the ceiling may still be insufficient to deter arbitrage completely”.
- 7.81 Lexgreen submits that “it is not the job of Ofcom to determine termination charges to prevent arbitrage”.

### **Ofcom’s response**

- 7.82 Our no-arbitrage ceiling is not based on a network TCP engaging in arbitrage activity. Rather, our model considers arbitrage opportunities arising from a network TCP seeking to attract legitimate traffic onto its network, and in so doing inadvertently entering into contracts for termination with arbitrageurs. We consider that it is appropriate to model an arbitrage ceiling based on this scenario because an efficient network TCP will have an incentive to enter into new contracts to terminate additional traffic minutes at any termination rate at or above its own marginal costs (of termination). Furthermore, any termination rate above its own marginal costs would incentivise a TCP to make payments to service providers to attract their traffic to its network.
- 7.83 We consider that short-term, opportunistic arbitrageurs would be likely to exploit any opportunity afforded by the inclusion of 0870 calls in retail packages, if termination rates were sufficient to make arbitrage profitable. We therefore consider that the potential for incremental arbitrage activity to arise justifies modelling an arbitrage ceiling based on marginal costs of a fully interconnected network TCP.
- 7.84 We note Cable & Wireless’s comments about evidence on the extent of additional arbitrage at the existing 0870 termination rate (since BT started including 0870 calls in inclusive packages). We agree with Cable & Wireless that low termination rates are not the only way of combating arbitrage, and that, for example, recent changes to BT’s fair use policies may have made arbitrage less attractive. However, the rates that we have determined are designed to enable TCPs to recover the efficiently incurred costs of terminating 0870 calls. The no-arbitrage ceiling is a cross-check, rather than being determinative; in fact, it is noticeably higher than the Option 2 rates that we have determined are appropriate.
- 7.85 We accept that (as BT suggests) it may not be possible to eliminate every possibility of arbitrage at the determined rates, since certain forms of arbitrage activity may be possible at very low cost. To eliminate arbitrage completely might require rates to be set at levels which were too low, relative to the costs which we consider it reasonable for TCPs to recover in the termination rate. That would be disproportionate, given the materiality of the arbitrage risk below the no-arbitrage ceiling. CPs can and do employ other methods to detect and prevent arbitrage.
- 7.86 In response to Lexgreen’s comments, Ofcom considers that it is appropriate to adopt a set of rates that will to the extent possible deter arbitrage, in the interests of striking a fair balance between the parties to the dispute.



## Comments on benchmarking

- 7.87 IVResponse submits that “the actual 0870 termination rate that would have been derived, once discounts have been deducted and assuming that 0870 was still in the NTS condition” would be a suitable benchmark for determining this dispute.
- 7.88 Gamma considers that “the most appropriate way to achieve the policy objective is for the cost of terminating 0870 calls to be as close as practicable to the cost of terminating a national geographic call” and suggests the cost of terminating calls to 03 numbers as a sensible benchmark.
- 7.89 Lexgreen suggests 0800 as an appropriate benchmark, as “It should cost BT exactly the same to send a call to an 0800 number as it does to an 0870 number. The only difference being that it would charge its own customers for calls to the 0870 numbers instead of charging the operator running the 0800 number.”

**Cable & Wireless notes that Ofcom “saw fit to conduct benchmarking against rates from both Thus and Cable & Wireless even with full knowledge that these had already been withdrawn”, and is “dismayed” that Ofcom has benchmarked against these rates when Cable & Wireless has made it clear to Ofcom that it does not consider they represent an appropriate outcome for resolving this dispute.Ofcom’s response**

- 7.90 IVResponse’s suggestion depends on an assumption that 0870 calls remain within the scope of the NTS Condition, and is not therefore an appropriate benchmark in this case given that 0870 regulation will change from 1 August 2009.
- 7.91 As set out at paragraph 6.155 below, Ofcom does not consider that 0800 numbers (as suggested by Lexgreen) are a relevant benchmark. Moreover, we note that Lexgreen uses the 0800 rates as a starting point to come up with rates that, in context of this dispute, do not strike a fair balance between the parties since they are above the no-arbitrage ceiling (and therefore significantly above the level necessary to cover the costs which we deem should be recovered through the termination charge).
- 7.92 We set out at paragraphs 6.157 to 6.159 above why we do not consider that termination rates for 03 numbers (as proposed by Gamma) should be relied upon as a benchmark for determining the 0870 termination rates.
- 7.93 At the time of submitting their proposed rates, Cable & Wireless and THUS were both large, well resourced communications providers<sup>58</sup>, fully able to establish an informed negotiating position on the level of 0870 termination rates, which they would regard as acceptable for resolving this dispute. Although they subsequently withdrew those rates, neither Cable & Wireless nor THUS chose to submit revised rates nor did they identify flaws in the methodology which they had used to calculate the rates in the first place. For these reasons, we do not consider it unreasonable to compare the rates we have determined against those proposed by these parties to the dispute. We have expressed reservations about the usefulness of the [X] rates in any event. In relation to the rates proposed by [X], we merely note the similarity and do not treat that as determinative.

---

<sup>58</sup> THUS was acquired by Cable & Wireless on 1 October 2008

## **Comments on whether Ofcom's proposals strike a fair balance between the parties**

- 7.94 Cable & Wireless submits that while the rates proposed by Ofcom under Option 2 provide a floor for the appropriate rates, they do not achieve a fair balance between the parties on the grounds that they favour OCPs over TCPs.
- 7.95 Cable & Wireless comments that BT is not dependent on low termination charges for maintaining its current retail pricing of 0870 calls – it is also able to increase its prices for inclusive packages to reflect the added value of incorporating 0870 calls.
- 7.96 Cable & Wireless proposes that in order to achieve a fair balance, the impact of rates on an operator's origination and termination business should be considered in order to establish an industry rate for the fairest rate between all parties in the dispute. While such an approach may diminish BT's incentive for pricing 0870 calls at geographic levels and represent a weaker relationship in terms of the linkage between price and cost, Cable & Wireless does not consider these hurdles to the adoption of its proposals.
- 7.97 FleXtel suggests that Ofcom "has biased the outcome, in favour of OCPs, in order to make Ofcom's shaky 0870 proposals work".

## **Ofcom's response**

- 7.98 For the reasons set out in section 6 we consider that 0870 termination rates proposed by BT and the TCPs which are party to the dispute, do not achieve a fair balance between the parties and are not reasonable in the light of Ofcom's statutory duties and the Community requirements. In determining what an appropriate termination rate should be, we have considered, in line with the CAT's guidance in the TRD core issues judgment, the factors set out at paragraph 6.6 Of these, two have been of particular value to the final determination – the relationship of price to cost and the extent to which the determined rates contribute to Ofcom's regulatory objectives in sections 3 and 4 of the Act.
- 7.99 Cable & Wireless has proposed that the determined rates should be above the "floor" identified by Option 2 of Ofcom's analysis (and in fact acknowledges that, using its approach, rates might be above the no-arbitrage ceiling). However, for the reasons set out in paragraphs 6.146 to 6.149, rates above the no-arbitrage ceiling identified in Table 9 and Annex 4 would not achieve a fair balance between the parties and could prejudice the alignment of 0870 retail prices with those for geographic charges and hence, the achievement of Ofcom's consumer and competition objectives, as set out in paragraphs 6.166 to 6.167. Ofcom considers Cable & Wireless's comments on its no-arbitrage ceiling below.
- 7.100 We acknowledge that BT should be able to maintain the alignment of retail prices of 0870 calls and geographic calls were 0870 termination rates to be set between the level set in this determination and the arbitrage ceiling. However, its incentives to do so would diminish as the gap between termination charges for geographic calls and those for 0870 calls increased. In addition, as Cable & Wireless notes, the relationship of price to cost would be weakened.
- 7.101 We have reconsidered whether the imbalance in terms of the impact of this determination on TCPs compared to that on BT (as described by Cable & Wireless) should nonetheless overrides these disadvantages. We have concluded that it should not. First, as noted at 6.78 the TCP is not dependent on the 0870 termination charge

for its revenues – it is able to recover costs from the SPs to which it is providing termination and hosting services and can migrate to other NTS number ranges, where termination charges are higher and revenue sharing continues. Second, in the TRD core issues judgment, the CAT made it clear that Ofcom's role in determining disputes is not akin to that of a commercial arbitrator, seeking a resolution that is fair and reasonable between the parties. Instead, it must combine fairness considerations with those that accord with its regulatory objectives.

7.102 For these reasons and the reasoning set out in detail in section 6, we are satisfied that there are reasonable grounds for concluding that the 0870 termination rates we are setting in this determination 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.

7.103 For the same reasons, Ofcom does not accept FleXtel's assertion that its outcome is biased in favour of OCPs.

### **Comments on Ofcom's statutory duties and the Community requirements**

7.104 FCS argues that Ofcom's proposed rates are [ ] and will put some smaller suppliers of 0870 numbers out of business. This will result in a reduction in competitiveness and should be reconsidered.

7.105 FCS also says that since TCPs will be disadvantaged by the termination rates while BT, as OCP, will benefit, Ofcom is favouring one group of communications providers over another.

7.106 FCS questions how the consumer will benefit from the rates since 0870 calls from mobiles are considerably higher than those from fixed lines and there is little incentive for mobile operators to pass on costs savings to their customers. TelXL also questions whether the drop in termination charges will be passed on to consumers.

7.107 Lexgreen contends that since the additional conveyance costs of terminating 0870 calls within the EU are not covered by the proposed termination rates, this is contrary to the aims of the Single European Market.

7.108 IV Response argues that Ofcom should maintain its Community goal of promoting the interests of all EU citizens and reconsider the proposed termination rates, given the impact on overseas callers should 0870 services migrate to other number ranges.

### **Ofcom's response**

7.109 We recognise that the termination rates determined in this dispute may result in some TCPs and resellers no longer offering services on 0870. For the reasons set out in paragraph 6.90, we are satisfied that this will not result in a distortionary effect on competition generally in the NTS termination/hosting market or specifically in the 0870 segment.

7.110 We consider in paragraphs 6.14 to 6.60 and 7.100 to 7.105 the extent to which the 0870 termination rates achieve a fair balance between the parties. For the reasons set out there, we are satisfied that they do. As noted in the previous paragraph, we are also satisfied that the rates will not lead to a distortionary effect on competition, notwithstanding that some TCPs and resellers may choose no longer to offer

services on 0870. For these reasons, we are satisfied that this Determination does not favour one form of communications service over another.

- 7.111 In the 2009 Statement, we concluded that there was a good chance that the 0870 measures would lead to a significant proportion of CPs charging 0870 calls at geographic rates, leading to a significant improvement in pricing transparency with resulting consumer benefits, as set out in the impact assessment.
- 7.112 In the 2009 Statement, we did, however, acknowledge stakeholder concerns about charges for 0870 calls from mobile networks. Ofcom will be monitoring pricing trends for 08 calls from mobile networks to assess the extent to which enhanced price publication obligations in General Condition 14.2, including the revisions for 0870 calls, increase downward competitive pressure on mobile pricing.
- 7.113 For the reasons set out in section 6, we consider that additional conveyance costs attributable to the location of the SP overseas should be recovered from that SP rather than through the termination charge. We do not consider that position hinders the development of the European internal market.
- 7.114 We also note that the contrary position could potentially prejudice the objective of aligning retail prices for 0870 calls with those for geographic calls, and hence the consumer and competition benefits arising from enhanced price transparency. This is relevant to our obligation under Article 8(4)(d) of the Framework Directive, to promote the interests of EU citizens by “promoting the provision of clear information, in particular requiring transparency of tariffs...for using...publicly available electronic communications services”.
- 7.115 Ofcom has recognised that some service providers have migrated and will migrate from the 0870 number range as a result of the changes to the charging arrangements introduced by the 2009 Statement. That applies to both domestic service providers and those in other EU Member States. There are other NTS number ranges available to do so; SPs in other Member States also have the option of migrating to an international number range.
- 7.116 In all the circumstances, we are satisfied that the termination rates are, contrary to Lexgreen’s submission, consistent with Ofcom’s Community requirements under section 4 of the Act.
- 7.117 As regards IVResponse’s comment, as set out above we consider that the impact on overseas callers, should SPs migrate to other NTS number ranges, is minimal and does not outweigh other considerations under Ofcom’s regulatory objectives and the Community requirements.

## Other comments

### Comments on implementing the new rates

- 7.118 FlexTel submits that it will not be feasible for some providers to adopt the necessary billing systems for them to implement the new rates for very low volume 0870 numbers. TelXL submits that a number of “NTS specialist resellers” will go out of business as a result of this Determination, for the same reason. FlexTel states that it has “no choice but to close its 0870 service” and migrate its customers to other ranges that retain “viable micropayment solutions”.

## **Ofcom's response**

- 7.119 Ofcom acknowledges that some TCPs currently provide services that are funded entirely from call charges and may not have the capability to bill SPs directly (and do not wish to adopt this charging model). This group would be likely to require their SP customers to move to alternative 08 or 09 number ranges. This impact of the 0870 measures was considered in the assessment of the proposals (see for example paragraphs 4.20-4.23 of the Changes to 0870 consultation). As noted below, Ofcom gave stakeholders extended notice of its proposed changes to 0870 in order to give TCPs and their customers time to make preparations such as moving their services to new numbers.

## **Comments on the effective date of the new 0870 rates**

- 7.120 Cable & Wireless comments on its contractual commitments to customers and urges Ofcom to make its final determination by 15 June 2009 to meet a 1 August 2009 implementation date.
- 7.121 IVResponse submits that an implementation date of 1 August 2009 is "unrealistic", and does not allow it enough time to implement a communication and migration plan or adopt a billing strategy. IVResponse notes Ofcom's comment that BT's pricing strategy is likely to lead to a reduction in 0845 termination rates, and states that as some services currently on 0870 will migrate to 0845, it considers that it would be "unreasonable to discuss migration with our SPs customers while this issue is unresolved".
- 7.122 The FCS submits that "a clear six months from the final published outcome of this dispute is the minimum notice that Ofcom should make to the industry to allow it to adapt in a measured manner" and asks Ofcom to "explain the health and safety risks" associated with its proposed implementation timescales.
- 7.123 As set out at above, a number of the 44 NTS service providers who responded to the consultation raised specific concerns about the implementation timetable, arguing that it did not give them enough time to implement the necessary changes to their businesses.

## **Ofcom's response**

- 7.124 We note Cable & Wireless's concerns about the necessary time for implementing a rate change and the potential impact on its customers. We considered that it has made this Determination in sufficient time to enable Cable & Wireless and others to implement the new rates.
- 7.125 In response to others' comments on the implementation date, Ofcom first announced proposals to make changes to the charging arrangements for 0870 calls in April 2006, giving extended notice in order to give CPs and SPs time to prepare. We consider that CPs have had ample time to make preparations, for example considering whether or not to adopt new billing strategies (or to mitigate any potential effects that could lead to health and safety concerns, as suggested by FCS).
- 7.126 In the 2009 Statement, we considered stakeholders' comments about the implementation timetable (for the 0870 measures) in some detail<sup>59</sup>. We concluded that proceeding with implementation of the 0870 measures on 1 August 2009 struck

---

<sup>59</sup> See paragraphs 3.179 to 3.188 of the NTS Statement.

an appropriate balance between the interests of CPs, SPs and those of stakeholders more generally.

- 7.127 We acknowledge that BT may revise its termination payments for 0845 calls as a result of the inclusion of 0845 calls in some BT consumer call packages. While we acknowledge that it would be useful for CPs to have visibility of the revised rates, we do not consider it essential that TCPs should have this information before the new arrangements take effect, particularly as termination payments for 0845 calls have always been subject to revision at short notice due to the linkage with BT's retail call charges.
- 7.128 In response to the concerns voiced by NTS service providers, as noted above, we gave extended notice of its proposed changes to 0870 in order to give TCPs and their customers time to make preparations such as moving their services to new numbers and updating stationery and promotional material. We understand that the TCP supplying these customers has only recently informed them of its intention to withdraw their services on 0870. While we sympathise with these stakeholders' concerns, we reiterate that our proposals to change the way that 0870 numbers are regulated were first published in April 2006, and have been the subject of two public consultations.

### **Comments on the potential impact of the Determination on other number ranges**

- 7.129 IVResponse submitted that Ofcom has not considered the impact of the determination in relation to other call types, for example 0845 and 03 which are "being brought into the scope of the dispute".
- 7.130 BT submits a review of 0845 numbers should be undertaken as soon as is practical after the implementation of the new 0870 rates.

### **Ofcom's response**

- 7.131 0845 and 03 numbers are not (and have not been) "in the scope" of this dispute. While we note BT's comments, it is not within the scope of this dispute to comment on a possible review of arrangements for 0845.

### **Comments on amendments to GC14.2**

- 7.132 IVResponse submits that it is
- "...concerned that it appears that Ofcom is favouring OCPs by amending GC14.2 to include 0870. Any OCP (in particular mobile OCPs) that considers the determined 0870 rate would compromise the profitability of its inclusive call packages, were 0870 numbers made part of inclusive call packages, has the opportunity to charge 0870 at a higher rate and comply with the revised GC 14.2."

### **Ofcom's response**

- 7.133 The changes IVResponse is referring to (which were the changes announced in the NTS Statement) are to Annex 2 of General Condition 14. These changes build on the existing requirements that apply to 0870 calls.
- 7.134 IVResponse is correct in saying that OCPs will be able to charge 0870 calls at above geographic rates and still comply with GC14.2 – although Ofcom's policy, as set out

in the 2009 Statement, is intended to align 0870 prices and geographic prices wherever possible. The purpose of GC14.2 is to ensure price transparency for consumers, rather than to regulate retail prices. In the NTS Statement, Ofcom concluded that it would be more proportionate and in better accordance with Ofcom's legal duties to adopt these changes rather than an alternative option under which OCPs would be required to charge 0870 calls at geographic rates.

## Conclusion

7.135 Having taken into account stakeholders' comments on our draft Determination, as set out in this section, we decided not to make any changes to the proposals set out in the draft Determination.

7.136 We therefore determine that BT is required to purchase termination of calls to 0870 numbers at the rates specified in Table 12 below.

7.137 Our Determination is at Annex 1 below and will take effect on 1 August 2009.

**Table 12: 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 |

## Section 8

# Summary tables

**Table 13: 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 strikes 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"> <li>the desirability of promoting competition in the relevant markets;</li> <li>the desirability of encouraging investment and innovation in the relevant markets;</li> </ul> | <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"> <li>the interests of those consumers in respect of choice, price, quality of service and value for money.</li> </ul>   | <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><b>RELEVANT OFCOM GOALS:</b></p> <ul style="list-style-type: none"> <li>the availability throughout the United Kingdom of a wide range of electronic communications services;</li> </ul>  | <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><b>COMMUNITY GOALS:</b></p> <ul style="list-style-type: none"> <li>to promote competition in communications markets;</li> <li>to contribute to the development of the European internal market;</li> <li>to promote the interests of all European Union citizens;</li> <li>not to favour one form of electronic communications service over another.</li> <li>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.</li> </ul> | <p>We are not satisfied that the termination rates proposed by BT are set at a level that strikes 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 14: Assessment of TCPs' proposed termination charges against Ofcom's regulatory objectives and Community requirements**

| <b>Factor</b>  | <b>Assessment</b>   |
|--|---|
| <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"> <li>the desirability of promoting competition in the relevant markets;</li> <li>the desirability of encouraging investment and innovation in the relevant markets;</li> </ul> | <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"> <li>the interests of those consumers in respect of choice, price, quality of service and value for money.</li> </ul>   | <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><b>RELEVANT OFCOM GOALS:</b></p> <ul style="list-style-type: none"> <li>the availability throughout the United Kingdom of a wide range of electronic communications services;</li> </ul>  | <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><b>COMMUNITY GOALS:</b></p> <ul style="list-style-type: none"> <li>to promote competition in communications markets;</li> <li>to contribute to the development of the European internal market;</li> <li>to promote the interests of all European Union citizens;</li> <li>not to favour one form of electronic communications service over another.</li> <li>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.</li> </ul> | <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 15: 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 6.106 and that will effectively promote competition for the reasons set out in paragraphs 6.167 - 6.170 .</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"> <li>the desirability of promoting competition in the relevant markets;</li> <li>the desirability of encouraging investment and innovation in the relevant markets;</li> </ul> | <p>We are satisfied that these termination rates are pro-competitive for the reasons set out in paragraphs 6.167 - 6.170.</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"> <li>the interests of those consumers in respect of choice, price, quality of service and value for money.</li> </ul>   | <p>For the reasons set out in paragraph 6.167, 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 6.167, we consider that FAC-based termination charges should facilitate the achievement of competition benefits flowing from enhanced pricing transparency.</p> |

| Factor   | Assessment  |
|--|---|
| <p><b>RELEVANT OFCOM GOALS:</b></p> <ul style="list-style-type: none"> <li>the availability throughout the United Kingdom of a wide range of electronic communications services;</li> </ul>  | <p>For the reasons set out in paragraphs 6.167, we consider that FAC-based termination charges should facilitate the achievement of competition benefits flowing from enhanced pricing transparency.</p>  |
| <p><b>COMMUNITY GOALS:</b></p> <ul style="list-style-type: none"> <li>to promote competition in communications markets;</li> <li>to contribute to the development of the European internal market;</li> <li>to promote the interests of all European Union citizens;</li> <li>not to favour one form of electronic communications service over another.</li> <li>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.</li> </ul> | <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 6.106 and that will effectively promote competition for the reasons set out in paragraphs 6.167 - 6.170 .</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 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—

making a declaration setting out the rights and obligations of the parties to the dispute;

giving a direction fixing the terms or conditions of transactions between the parties to the dispute;

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

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*<sup>60</sup> (‘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

---

<sup>60</sup> see [http://www.ofcom.org.uk/consult/condocs/nts\\_forward/statement/statement.pdf](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*<sup>61</sup> ('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.

---

<sup>61</sup> <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 1 August 2009, 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;



- 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**

**17 June 2009**

## Appendix 1

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

| Operator Name (Registered)           | Registered number | Registered address   |
|--------------------------------------|-------------------|--|
|                                      |                   | B45 8FX  |
| Aggregated Telecom Limited           | 03882936          | Willow Court<br>7 West Way<br>Botley<br>Oxford<br>OX2 0JB                        |
| Invomo Limited                       | 6267056           | 130 City Road<br>London<br>EC1V 2NW  |
| FleXtel Limited                      | 02772380          | Griffin Court<br>24-32 London Road<br>Newbury<br>Berkshire<br>RG14 1JX.          |
| Gamma Telecom Holdings Limited       | 4287779           | 8-10 New Fetter Lane<br>London<br>EC4A 1RS                                       |
| Inclarity Limited                    | 02673204          | 7th Floor<br>Olympic Office Centre<br>8 Fulton Road<br>Wembley Middlesex HA9 0NU |
| Edge Telecom Limited                 | 03101247          | Global House<br>2 Crofton Close<br>Lincoln<br>LN3 4NT                            |
| IV Response Limited                  | 04318927          | 57-61 Mortimer Street<br>London<br>W1W 8HS                                       |
| Prodigy Internet Limited             | 03828160          | 217 Portobello<br>Sheffield<br>S1 4DP  |
| Sala Trading Ltd                     | 03617973          | 121 Edgware Road<br>London<br>W2 2HX   |
| Magrathea Telecommunications Limited | 04260485          | Albany House<br>14 Shute End<br>Wokingham<br>Berkshire<br>RG40 1BJ               |
| Skytel Limited                       | 04227994          | 78 Chorley New Road<br>Bolton<br>BL1 4BY   |
| Vectone Network Limited              | 05445235          | 58 Marsh Wall<br>London<br>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)  | <b>0.56</b> | <b>0.26</b> | <b>0.20</b> |
| 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

A1.1 [X]

## Figure 6 Arbitrage scams [Confidential]

A1.2 [X]

A1.3 [X]

## Methodology

A1.4 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.<sup>62</sup> Such a TCP will be interconnected with BT at many points.

A1.5 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.

A1.6 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 any outpayment available to arbitrageurs would be too low to provide arbitrage incentives.

---

<sup>62</sup> There are approximately 70 points of interconnection with BT's fixed line network upon which charges for termination are based.

- A1.7 An important determinant of the scope for AIT and arbitrage 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.
- A1.8 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.
- A1.9 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.
- A1.10 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).
- A1.11 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 and arbitrage activity.
- A1.12 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**

- A1.13 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.



A1.14 As discussed above, TCPs will require termination for NTS calls which will require different distance related termination services<sup>63</sup> (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 Figure 6.

A1.15 Applying this methodology, we have calculated the weighted average geographic termination charges as set out in the following table:

**Table 16 Weighted geographic termination charges (ppm)**

| <b>Geographic termination services</b>                      | <b>D</b> | <b>E</b> | <b>W</b> |
|---|----------|----------|----------|
| 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   |
| <b>Weighted geographic termination rate (Single Tandem)</b> | 0.34     | 0.16     | 0.12     |

Source: BT carrier price list, Ofcom

## Number translation costs

A1.16 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.<sup>64</sup> 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.

A1.17 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.

A1.18 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*

<sup>63</sup> As noted above 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.

<sup>64</sup>

[http://www.ofcom.org.uk/bulletins/comp\\_bull\\_index/comp\\_bull\\_ccases/closed\\_all/cw\\_823/NCCN\\_500.pdf](http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ccases/closed_all/cw_823/NCCN_500.pdf)

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).

- A1.19 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

- A1.20 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.
- A1.21 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.
- A1.22 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.
- A1.23 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).
- A1.24 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.
- A1.25 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).

- A1.26 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.
- A1.27 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.
- A1.28 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).
- A1.29 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.
- A1.30 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 17 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

- A1.31 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.
- A1.32 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 A1.32-A1.41 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*.
- A1.33 A 50% ratio was assumed for retail costs because this was approximately the ratio of (distributed) SAC (DSAC)<sup>65</sup> 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 *NCCN 500* investigation.
- A1.34 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.
- A1.35 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. 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

<sup>65</sup> 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.

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.

- A1.36 Ofcom notes that incremental costs will be below FAC as the former include no common costs (see paragraph A1.31). In this dispute, Ofcom has followed the rule of thumb that incremental costs are 50 per cent of FAC (see Section 6 and from paragraph A1.36 onward below).
- A1.37 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%.
- A1.38 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.
- A1.39 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 portability<sup>66</sup>.
- A1.40 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 2002<sup>67</sup> 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.<sup>68</sup> 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.
- A1.41 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 view is that it would be reasonable 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. Ofcom therefore applies an average LRIC:FAC ratio for

---

<sup>66</sup> See paragraph 11.13 in

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

<sup>67</sup> See 'Protecting consumers by promoting competition: Oftel's conclusions -20 June 2002'

<sup>68</sup> 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

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.

- A1.42 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 0.13ppm for the network operator on a LRIC basis.

**Table 18 Network related number translation costs (ppm)**

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

Source: Ofcom, island operator

- A1.43 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 above.
- A1.44 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 investigation<sup>69</sup>. 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.
- A1.45 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 [X]ppm.
- A1.46 In this determination however, we are interested in estimating the minimum possible retail costs for an efficient network TCP.
- A1.47 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 calls. Accordingly, the arbitrage ceiling should reflect the minimum possible efficient retail costs for a network TCP (i.e. minimum possible incremental costs).

<sup>69</sup>

[http://www.ofcom.org.uk/bulletins/comp\\_bull\\_index/comp\\_bull\\_ccases/closed\\_all/cw\\_823/NCCN\\_500.pdf](http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ccases/closed_all/cw_823/NCCN_500.pdf)

A1.48 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.

A1.49 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 A1.36). Hence our central estimate of the minimum retail TCP LRIC is [ ]ppm.

### Margin for error

A1.50 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.

A1.51 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 A1.43-A1.48). 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.

A1.52 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 A1.32-A1.34). 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 A1.35 onward). Finally, Ofcom applies both sensitivities (A and B) simultaneously to derive a lower bound estimate of the no-arbitrage ceiling (Sensitivity C).

A1.53 The following tables set out the sensitivity analysis.

**Table 19: Number translation sensitivity analysis**

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

A1.54 Ofcom notes that the 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 determined termination rate should be interpreted to have passed this sensitivity.

A1.55 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 FAC rate is not likely to create an unacceptable risk of arbitrage.

### **Costs of an arbitrageur**

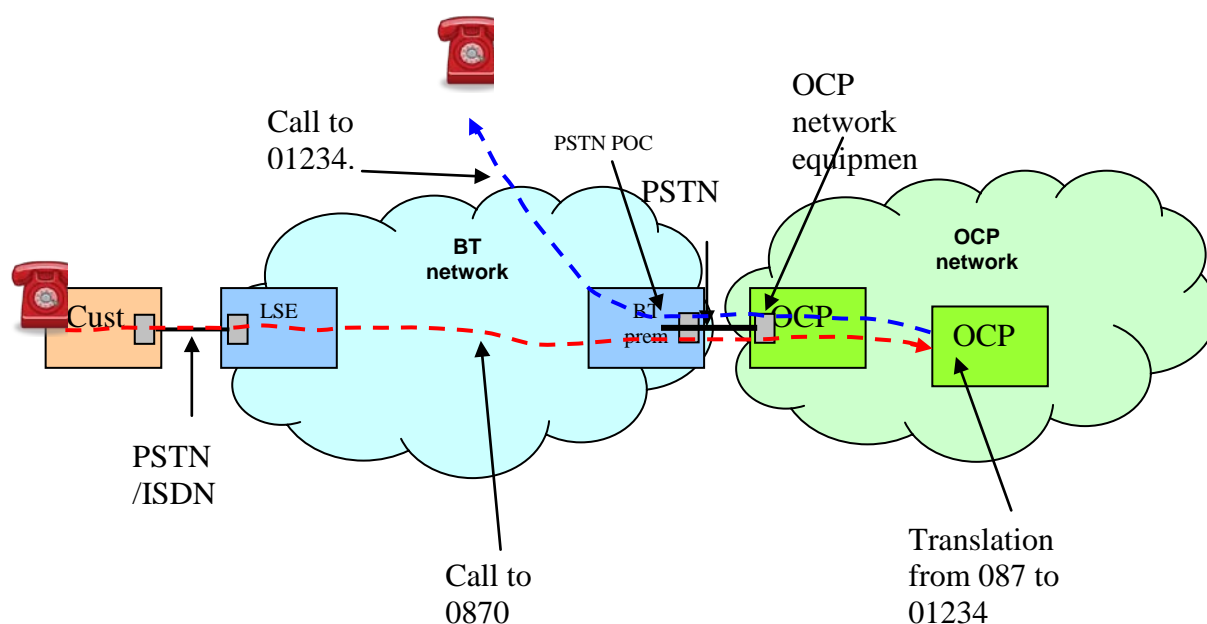
A1.56 [ 3<] which it would need to more than cover with an outpayment from the TCP in order to make the arbitrage activity profitable.

A1.57 In assessing those costs, Ofcom has taken as a starting point a scenario where an arbitrageur signs up to BT Together Option 2 or 3 flat rate call plan, and engages in self- or auto-dialling activities by making 0870 calls which are translated into calls to geographic numbers belonging to the arbitrageur.

**A1.58** The arbitrageur is assumed to engage in artificially inflating 0870 traffic whereby it is able to maintain a near constant call [ 3<].



**Figure 7 Diagram of AIT**



A1.59 [redacted] of the NTS policy. The caller will be able to make two concurrent calls to 0870 numbers by keeping one call on hold and one live.

A1.60 This leads to the possibility of 86400 minutes per month<sup>70</sup> of calls to 0870 numbers at a monthly cost of £18.45.

A1.61 To receive these calls, the arbitrageur would have to have a phone line per 0870 number. Therefore they would require 2 further line rentals of £10.50 per month under BT Together Option 1 (which has the lowest fixed monthly rental). On this basis, the arbitrageur is able to keep 2 simultaneous calls to 0870 numbers live 24 hours a day and 7 days a week.<sup>71</sup>

A1.62 The 0870 numbers are provided free of charge to the arbitrageur by an NTS CP. These numbers would be mapped (typically) to geographic numbers in order that the call(s) could be completed and call minutes be accrued to the arbitrageur.

**A1.63** The overall costs of the arbitrage activity [redacted]:

- [redacted]

A1.64 [redacted] [redacted] [redacted] 6 months is £611.67. The total number of minutes accrued over 6 months is 518,400 (at 86,400 per month).

A1.65 The total cost divided by the total minutes yields the estimated ppm cost to an arbitrageur of engaging in such an activity of [redacted] **ppm**.

<sup>70</sup> **i.e.  $2 \times 24 \times 60 \times 30 = 86400$**  minutes per month.

<sup>71</sup> This gives the lower boundary of costs for making the calls, since an arbitrageur would seek to avoid detection under Artificially Inflated Traffic restrictions, which would require periodically changing the nature of the activity to avoid detection, which would entail additional cost.

## Results

A1.66 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.

A1.67 The relevant no-arbitrage ceiling for the Single Tandem point of handover, and by time of day period are shown in Table 19.

**Table 20: No-arbitrage ceilings (ppm)**

| <i>Elements of ceiling</i>  | <b>D</b> | <b>E</b> | <b>W</b> |
|---|----------|----------|----------|
| 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     |
| <b>Single Tandem no-arbitrage ceiling (near-end) – sum of above</b> | 0.68     | 0.46     | 0.42     |

Source: Ofcom calculations (see Annex 4)

## Annex 5

# Calculation of Option 1 and Option 2 rates

A1.68 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

A1.69 The costs of terminating a call under far-end handover arrangements and the adjustment for near-end handover are calculated simultaneously. This reflects the fact that a proportion of all traffic terminated needs additional conveyance due to handover at the near-end.

A1.70 The tables below illustrate this calculation for the near-end Single Tandem, point of handover

**Table 21: Deriving the near-end adjustment and far-end geographic termination costs (ppm)**

|   | <b>D</b>      | <b>E</b>      | <b>W</b>      | <b>Traffic weights</b> |
|---|---------------|---------------|---------------|------------------------|
| 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 (LRIC)            | 0.4697        | 0.2150        | 0.1693        | [ ✂ ]                  |
| Inter-tandem Conveyance - Medium (LRIC)           | 0.5566        | 0.2548        | 0.2006        | [ ✂ ]                  |
| Inter-tandem Conveyance - Long (LRIC)             | 0.6764        | 0.3097        | 0.2438        | [ ✂ ]                  |
| <b>Weighted conveyance and termination prices</b> | <b>0.4185</b> | <b>0.1968</b> | <b>0.1545</b> | 100%                   |

Source: BT Wholesale carrier price list<sup>72</sup>, Network Operator, Ofcom

<sup>72</sup>

## Interconnection circuit costs

- A1.71 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.
- A1.72 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.
- A1.73 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 (i.e. BT-BT and OCP-BT) traffic minutes.
- A1.74 The following table sets out the relevant charging parameters and implied interconnection circuit costs.

**Table 22: 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<br>= 50% | 0.0243 (LRIC) |       |

- A1.75 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 23: Interconnection circuit prices (at LRIC) (ppm)**

|                                | D     | E     | W     |
|--------------------------------|-------|-------|-------|
| Interconnection circuit prices | 0.031 | 0.018 | 0.014 |

A1.76 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 24: Option 1 rate at Single Tandem point of handover**

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

A1.77 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 25: Methodology for adjusting Option 1 rate for different points of handover**

| Point of handover     | adjustment <sup>73</sup>  |
|-----------------------|---|
| DLE                   | ST base + local - tandem  |
| ST (near-end)         | None (ST base)  |
| 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 |

A1.78 The following table identifies the adjustments and Option 1 rate in ppm.

**Table 26: Adjustments and rates for 5 points of handover**

| Point of handover | Adjustment (ppm) | Option 1 rates |
|-------------------|------------------|----------------|
|                   |                  |                |

<sup>73</sup>Adjustments 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 - short) | -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

A1.79 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.

A1.80 The tables below illustrate this calculation for the near-end Single Tandem, point of handover

**Table 27: Deriving the near-end adjustment and far-end geographic termination costs (ppm)**

|   | <b>D</b> | <b>E</b> | <b>W</b> | <b>Traffic weights</b> |
|---|----------|----------|----------|------------------------|
| 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   | [ ✕ ]                  |
| <b>Weighted conveyance and termination prices</b> | 0.4921   | 0.2305   | 0.1812   | 100%                   |

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

### Interconnection circuit costs

A1.81 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.

A1.82 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.

**Table 28: Interconnection charging parameters and implied ppm price**

|                              | <b>ISI</b>   | <b>CSI</b> |
|------------------------------|--------------|------------|
| 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) |            |

A1.83 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 29: Interconnection circuit prices (equivalent to FAC) (ppm)**

|                                | D     | E     | W     |
|--------------------------------|-------|-------|-------|
| Interconnection circuit prices | 0.063 | 0.030 | 0.023 |

A1.84 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 30: 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       |
| <b>Option 2 rate (Single Tandem point of handover)</b> | <b>0.56</b> | <b>0.26</b> | <b>0.20</b> |

A1.85 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 31: Methodology for adjusting Option 2 rate for different points of handover**

| Point of handover     | adjustment <sup>74</sup>  |
|-----------------------|---|
| DLE                   | ST base + local - tandem  |
| ST (near-end)         | None (ST base)  |
| 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 |

A1.86 The following table identifies the adjustments and Option 2 rate in ppm.

**Table 32: Adjustment and rates for 5 points of handover for Option 2**

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

<sup>74</sup> 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 |