



# Mobile call termination

Proposals for consultation

Consultation

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## Section 1

# Summary

- 1.1 Wholesale mobile voice call termination (“MCT”) is the service necessary for a network operator to connect a caller with the intended mobile recipient of a call on a different network. If voice call termination, generally, was not available a network operator could only terminate calls to other customers on its own network. This service is referred to as wholesale because it is sold and purchased by network operators rather than retail customers.
- 1.2 Ofcom is reviewing the market(s) for supply of MCT to determine whether they are effectively competitive and, if not, what remedies should be imposed.

## Background

- 1.3 Ofcom last conducted a review of markets for the supply of MCT during 2003/2004, and concluded that exercise on 1 June 2004 when it published the statement *Wholesale Mobile Voice Call Termination* (the “June 2004 Statement”) in which it designated Vodafone, O2, T-Mobile, Orange and Hutchison 3G UK (together, “the five MNOs”) as having Significant Market Power (“SMP”). Various conditions were imposed on the five MNOs, including charge controls which were imposed on only Vodafone, O2, T-Mobile and Orange (the “2G/3G MNOs”). Hutchison 3G UK (“H3G”) subsequently appealed its SMP designation and the Competition Appeals Tribunal (“CAT”) remitted the decision back to Ofcom to reconsider. The reassessment of H3G’s SMP during the period to 31 March 2007 is being undertaken as an exercise distinct from the present market review. The charge controls imposed on the 2G/3G MNOs will expire on 31 March 2007.
- 1.4 The present market review was initiated on 7 June 2005 when Ofcom published a document *Wholesale mobile voice call termination – a preliminary consultation* (“the Preliminary Consultation”). That document was intended to initiate consideration of the issues.
- 1.5 On 30 March 2006, having considered responses to the Preliminary Consultation, Ofcom published a more detailed consultation document *Wholesale mobile voice call termination* – (“the March 2006 Consultation”). That consultation set out Ofcom’s initial view that there are separate markets for MCT supplied by each of the five MNOs, and that the prima facie evidence indicates that each of these mobile operators has SMP in the market in which they supply MCT. Ofcom emphasised, however, that it had not yet concluded its analysis of whether any purchasers of MCT have countervailing buyer power (“CBP”) such that would constrain a supplier’s ability to exercise SMP.
- 1.6 The March 2006 Consultation also considered the detriments which may arise from the exercise of SMP in these markets; principally, that MCT charges may be excessive, and that excessive profits may not wholly be returned to consumers through reduced charges for other services or, if they are so returned to consumers, that the resulting price structures may be economically inefficient. Concern was expressed that excessive charges for MCT may result in a number of detrimental outcomes, including; under-consumption of fixed to mobile calls and other services originated on fixed networks; over-consumption of subsidised outgoing mobile services and mobile phones; inequitable outcomes in that some groups of consumers, such as heavy users of subsidised mobile goods and services, may

benefit to the detriment of other groups whose use of fixed to mobile calls is high relative to their consumption of subsidised mobile services.

- 1.7 The March 2006 Consultation explored a number of regulatory options for addressing those detriments. Ofcom indicated an initial view that, in the presence of SMP, some form of charge control might be appropriate and that there may be merit in applying a “technology-neutral” charge control to each MNO. For example, in the case of MNOs with both 2G and 3G networks a single control applying irrespective of which network is used to terminate a specific call. The March 2006 Consultation noted that as Ofcom had not yet concluded its cost modelling work it was unable also to express a view as to whether the same or different charge controls should be imposed on each of the five MNOs. Ofcom noted, however, that any distinctions between the controls imposed on different MNOs would need to be based on clear and unambiguous cost differences, otherwise controls risk distorting other markets, such as the retail markets for outgoing mobile services.
- 1.8 The March 2006 Consultation also proposed that Ofcom should ensure that any charge controls should not be so tight as to impact adversely prospects for investment, particularly in the light of uncertainty about future traffic levels on 2G and 3G networks. The document also noted the likely asymmetry of risks consequent on setting a charge control which, in light of subsequent market developments, is found to be above or below an MNO’s efficiently incurred costs.

### Ofcom’s present view

- 1.9 Having considered responses to the March 2006 Consultation, having completed an analysis of CBP and having more fully completed the cost modelling work, Ofcom is setting out in the present consultation its proposed views that
- There are separate markets for wholesale mobile voice call termination in the UK by each of Vodafone, O2, Orange, T-Mobile and H3G.
  - BT and other purchasers are unable to exercise CBP to the extent needed to constrain charges to the competitive level.
  - Each of the five MNOs has SMP in the market for termination of voice calls on its network(s)
  - Charge controls should be imposed on the supply of MCT by each of the five MNOs, and those controls should apply without distinction to voice call termination whether on 2G or 3G networks.
  - The charge control should apply for 4 years from 31 March 2007
  - Average charges of Vodafone, O2, Orange and T-Mobile should be reduced to 5.3 ppm (2006/7 prices) by the final year of the charge control period (1 April 2010 to 31 March 2011). This would remove the current differential charge control between providers who use 1800 MHz as opposed to 900 MHz spectrum. The reduction should be implemented in 4 equal (percentage) steps across the four years. However, Ofcom will re-evaluate the proposed final level of the charge and the glide path cap (in respect of each MNO separately) in the light of responses to this consultation exercise.
  - Average charges of H3G should be reduced to 6.0 ppm (2006/7 prices) by the final year of the charge control (1 April 2010 to 31 March 2011). This level reflects

exogenous cost differences between H3G and the 2G/3G MNOs. The change to be implemented by one of three alternative paths (to be determined by Ofcom following consideration of responses to this consultation exercise); either (i) a glide path of four equal percentage changes to the 2010/11 level; (ii) an initial reduction to 8.5ppm (2006/7 prices) in the first year of the control (1 April 2007 to 31 March 2008) followed by three reductions each of equal percentage change across the next three years; or (iii) an immediate reduction to cost in 2007/08 falling to the cost level in 2010/11 over four years. The proposed level of the charge cap in the final year of the four year control will also be re-evaluated in the light of responses to this consultation exercise (and the size of the charge reduction in the first year under option (ii) may also be adjusted).

- Further conditions should be imposed requiring provision of voice call termination on fair and reasonable terms and conditions (including contract terms), prohibiting undue discrimination, and requiring charge and contract term transparency.

1.10 The Notification setting out the proposed market definition, SMP designations and SMP conditions, including draft charge control conditions, are attached at Annex 21.

### **Next steps**

1.11 In accordance with the Communications Act, Ofcom is sending this proposal to the European Commission and to other National Regulatory Authorities (“NRAs”), as well as interested parties including the Secretary of State. Ofcom is inviting detailed comments on the issues raised in this consultation document by 22 November 2006.

1.12 After considering responses Ofcom expects to publish a concluding statement on this issue early in 2007.

## Section 2

# Introduction

## Market reviews and regulation today

- 2.1 As provided for in the Framework Directive (Directive 2002/21/EC), the European Commission has adopted a Recommendation on relevant products and services markets (“the Recommendation”)<sup>1</sup> which identifies markets within the electronic communications sector, the characteristics of which may be such as to justify the imposition of regulatory obligations. NRAs such as Ofcom are obliged to take the utmost account of the Recommendation when defining markets appropriate to national circumstances. If Ofcom considers a market reviewed is not effectively competitive, it must consider imposing remedies where appropriate on undertakings with SMP within that market. The Recommendation’s Market 16 is the market for voice call termination on individual mobile networks.
- 2.2 Ofcom last conducted a full review of the market for mobile voice call termination during 2003/4. Ofcom concluded in the statement *Wholesale Mobile Voice Call Termination* published on 1 June 2004 (“the June 2004 Statement”) that, as envisaged by the European Commission in its Recommendation, there are separate markets for mobile termination of voice calls on the network(s) of each of Vodafone, O2, T-Mobile, Orange and H3G (“the five MNOs”) (plus Inquam which has since ceased to trade). Those markets were considered to include voice call termination on both 2G and 3G networks, but they excluded termination of data and SMS. The June 2004 Statement also found that each of the five MNOs (plus Inquam) had SMP in their respective market. The formal Notifications to each of the MNOs defined the markets as follows (H3G was referred to in that document as “3”):
- wholesale voice call termination provided by 3 (such termination being provided via 3's mobile network);
  - wholesale voice call termination provided by Inquam (such termination being provided via Inquam's mobile network);
  - wholesale voice call termination provided by O2 (such termination being provided via O2's 2G and 3G mobile network);
  - wholesale voice call termination provided by Orange (such termination being provided via Orange's 2G and 3G mobile network);
  - wholesale voice call termination provided by T-Mobile (such termination being provided via T-Mobile's 2G and 3G mobile network); and
  - wholesale voice call termination provided by Vodafone (such termination being provided via Vodafone's 2G and 3G mobile network).

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<sup>1</sup> *Recommendation on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communication networks and services.*

[http://europa.eu.int/information\\_society/topics/telecoms/regulatory/publicconsult/documents/relevant\\_markets/l\\_11420030508en00450049.pdf](http://europa.eu.int/information_society/topics/telecoms/regulatory/publicconsult/documents/relevant_markets/l_11420030508en00450049.pdf)

- 2.3 As a consequence of those SMP designations, SMP conditions were imposed on all of the five MNOs (and on Inquam), but these varied between the MNOs. Vodafone, O2, T-Mobile and Orange (the “2G/3G MNOs”) were made subject to charge controls on mobile to mobile and fixed to mobile 2G voice call termination (but not 3G termination). The Target Average Charge for Vodafone and O2, which operate networks at 900 MHz and 1800 MHz, was set at 5.63ppm and for T-Mobile and Orange, which operate networks at 1800 MHz, at 6.31 ppm. These Target Average Charges were also subject to a Weights Adjustment Factor which makes small adjustments for changes in traffic profiles. No charge control was imposed on any form of termination by H3G (or by Inquam).
- 2.4 The 2G/3G MNOs were also made subject to further conditions which prohibit undue discrimination in the supply of 2G voice call termination, require supply of 2G voice call termination on fair and reasonable terms and conditions, and require publication and notification of contracts and charges for 2G voice call termination.
- 2.5 The charge controls imposed on the 2G/3G MNOs in June 2004 were time-limited and unless extended would have expired at the end of March 2006. Following consultation with stakeholders<sup>2</sup>, the charge control conditions were amended in December 2005 such that they will now expire at the end of March 2007 (*Wholesale Mobile Voice Call Termination – statement and notification extending the charge controls* published by Ofcom on 16 December 2005 – the “December 2005 Statement”).<sup>3</sup>
- 2.6 H3G was made subject only to an obligation to notify 2G voice call termination volumes and total voice call termination volumes to Ofcom and to supply, 28 days before implementation, details of 2G charges (and charge changes) to those with whom it had entered into contracts for the supply of 2G voice call termination.
- 2.7 In summary, therefore, the SMP conditions imposed on the 2G/3G MNOs in June 2004, and which are in force today, are as follows;
- Requirement to provide network access on reasonable terms and conditions
  - Requirement not to unduly discriminate
  - Control of fixed to mobile interconnection charges
  - Control of mobile to mobile interconnection charges
  - Requirement to publish access contracts
  - Requirement to notify charges
- 2.8 In respect of H3G, Ofcom imposed only one condition as follows;
- Requirement to publish charges and call volumes
- 2.9 In respect of Inquam, Ofcom imposed only one conditions as follows

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<sup>2</sup> *Wholesale mobile voice call termination markets – a proposal to modify the charge control conditions* published by Ofcom on 7 June 2005 (“the June 2005 Extension Consultation”)

<http://www.ofcom.org.uk/consult/condocs/wholesale/wholesale.pdf>

<sup>3</sup> [http://www.ofcom.org.uk/consult/condocs/wholesale/wmvct\\_statement/statement.pdf](http://www.ofcom.org.uk/consult/condocs/wholesale/wmvct_statement/statement.pdf)

- Requirement to notify charges

2.10 In July 2004 H3G challenged Ofcom's determination, attached to the June 2004 Statement, that H3G has SMP. On 29 November 2005 the Judgement of the Competition Appeals Tribunal ("the CAT")<sup>4</sup> found that Ofcom had erred in its determination as to the existence of significant market power because it did not carry out a full assessment of the extent to which BT had CBP. The CAT therefore required Ofcom to reconsider its determination of SMP taking into account the extent to which countervailing buyer power exists in BT. Ofcom is publishing today a reassessment of H3G's SMP in the period to 31 March 2007<sup>5</sup> ("the Reassessment of H3G's SMP").

## Consultation relating to the present market review

### Preliminary Consultation

2.11 In June 2005, in parallel with the proposal to extend the present charge controls for a further 12 months to 31 March 2007, Ofcom published a preliminary consultation document *Wholesale mobile voice call termination – a preliminary consultation* ("the Preliminary Consultation")<sup>6</sup> which was intended to initiate consideration of the issues which would need to be addressed during the next review of the MCT market, to be completed before the extended charge controls expire.

### Second Consultation

2.12 Having considered responses to the Preliminary Consultation, Ofcom set out in a further consultation *Wholesale mobile voice call termination* published on 30 March 2006 ("the March 2006 Consultation")<sup>7</sup> its proposed views on market definition, the existence of SMP and appropriate remedies, intending that the document should move forward the discussion of future options for regulation after 31 March 2007. The document noted, however, that Ofcom had not yet concluded its analysis of CBP and, therefore, its views on SMP were limited to the prima facie evidence. The document's exploration of detriments arising from the exercise of SMP, and the nature of possible remedies to address SMP, was, therefore, conditioned by this qualification.

### Consultation on the cost model

2.13 Throughout the process of developing a cost model, Ofcom has actively consulted key industry stakeholders (including the five MNOs as well as BT and UKCTA). This contact has been critical in terms of developing Ofcom's understanding of 3G network design and likely future demand scenarios as well as obtaining cost benchmarks for calibration of the new LRIC model. This process has taken place through a wide range of channels:

- **Information requests:** Mobile operators have submitted responses to several Ofcom data requests. These requests have focussed on obtaining accurate model inputs, realistic network dimensioning algorithms and calibration benchmarks for total Gross Book Value and operating costs.

<sup>4</sup> <http://www.catribunal.org.uk/documents/Jdg1047H3G281105.pdf>

<sup>5</sup> See Assessment of whether H3G holds a position of SMP in the market for wholesale mobile voice call termination on its network published by Ofcom on 13 September 2006

<http://www.ofcom.org.uk/consult/condocs/h3gsmp/>

<sup>6</sup> <http://www.ofcom.org.uk/consult/condocs/termination/wholesaleprelim.pdf>

<sup>7</sup> <http://www.ofcom.org.uk/consult/condocs/mct/summary/mct.pdf>

- **Workshops:** Ofcom has held three workshops with key industry stakeholders to discuss the structure, inputs and outputs of the model at various stages of development
- **Meetings:** A series of face-to-face meetings have been held with each of the mobile operators, BT and UKCTA. Generally these meetings have focussed on modelling implementation and key conceptual issues, as well as providing stakeholders with the opportunity to question Ofcom on all relevant issues.

### Third consultation

- 2.14 Having considered responses to the March 2006 Consultation, and having completed an analysis of CBP, Ofcom is setting out in the present, third, consultation document its formal proposal in respect of market definition, SMP and appropriate remedies. Ofcom has commented on the responses to the March 2006 Consultation in the main body of the present consultation, and has summarised responses at Annex 20.
- 2.15 Before formally defining a market, designating an operator as having SMP, and imposing SMP conditions (where these measures would affect trade between member states) Ofcom is required by Article 7 of the European Framework Directive to make its draft measures accessible to the European Commission and to other NRAs, as well as interested parties. Ofcom is submitting the present consultation document to the European Commission and other NRAs. This does not, however, preclude Ofcom from reconsulting again, should it decide, in light of responses, that this is appropriate. Ofcom is also providing a copy to the Secretary of State.

### Next steps

- 2.16 After considering responses to the present consultation Ofcom expects to publish a concluding statement and, where appropriate, publish formal notices identifying markets, making market power determinations in relation to those markets and setting appropriate SMP services conditions.
- 2.17 Ofcom is inviting detailed comments on the issues raised in the present consultation document by 22 November 2006. Information about how to respond is set out in Annex 1.

### Commercial context

- 2.18 Annual retail revenues of the mobile industry are approximately £13 billion, and wholesale revenues around £3.6b. Annual revenue from MCT is of the order of £2.5 billion, which is equivalent to approximately 15% of revenue for the sector. Around two thirds of this revenue from mobile call termination (£1.5 billion) relates to calls between MNOs, and the remaining sum (£1 billion) to calls from fixed operators.
- 2.19 The 2G/3G MNOs each report having between 12 million and 18 million subscribers (the basis on which these figures are assessed may vary according to different churn management practices which, for a period of time, leave some non active subscriptions on an MNO's subscriber records). H3G reports that its current registered subscriber base is over 3.5 million. Volumes of voice call minutes terminated by each of the five MNOs are roughly proportionate to the volume of subscribers, although there is some material variation between MNOs.
- 2.20 Termination revenues are, of course, affected by the different charges levied for mobile termination; the unregulated charges levied by H3G (see Figure 2.1 below),

which average at about [8%], materially narrow the termination revenue gap between H3G and the 2G/3G MNOs despite the fact that H3G terminates for its subscriber base far fewer call minutes than each of the 2G/3G MNOs terminate for theirs.

- 2.21 In addition to receiving revenue for mobile voice call termination, each MNO also makes payments to other MNOs for voice call termination on their networks. Although, as might be expected, the flow of termination minutes between MNOs is broadly in balance, there are some MNOs which are material net providers of inter-MNO termination minutes (and, therefore, net receivers of inter-MNO revenue).

## Profitability

- 2.22 Ofcom has performed a high level accounting review of the reported profitability of the MNOs. Ofcom recognises, however, that accounting returns may not of themselves provide a complete picture in relation to economic returns of the MNOs. Drawing robust conclusions from accounting data can be problematic where, for example,
- the industry is not in a steady state;
  - the industry is subject to technological change;
  - the industry tends to make investments with long payback periods
  - asset valuations for accounting purposes are not representative of the assets' economic value.
- 2.23 These issues are relevant for the five MNOs. However, as explained below, it is Ofcom's view that the observed returns are not out of line with the Weighted Average Cost of Capital ("WACC") for the industry.
- 2.24 Accounting returns over a short period are unlikely to be representative of the long term return, particularly in capital intensive industries; for example, the MNOs have incurred the costs of building out their networks and of acquiring 3G spectrum in anticipation of returns over a long period. It is only after looking at the returns over the duration of the investment cycle that a full picture of the profitability can be assessed.
- 2.25 Specifically, for the MNOs, the assumptions regarding the treatment of the 3G spectrum costs will impact significantly on any measure of performance, whether it is in assessing the profit (which will be impacted by assumptions regarding amortisation) or the asset base (which will be impacted by assumptions regarding the appropriate valuation of the asset). 3G spectrum represented a substantial upfront cost to the MNOs. The amortisation of these costs a significant reported annual cost to the MNO's, yet the expected increase in revenues will occur in future years. The impact is therefore to increase the capital employed and depress annual profits in the short term.
- 2.26 In 2005, the five MNOs reported aggregate earnings before interest and tax of approximately £700m<sup>8</sup>. However, this was after deducting the amortisation of 3G spectrum costs and, significantly, includes the results of H3G, which has reported losses in the early years of its operations. The four 2G/3G MNOs all reported positive

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<sup>8</sup> Based on results for the years ended 31 December 2004 or 31 March 2005.

earnings before interest and tax, and aggregate earnings before interest, tax, depreciation and amortisation were approximately £2.6bn.

- 2.27 Return on capital employed (ROCE) represents the efficiency with which capital is being used to generate revenue. ROCEs that consistently and significantly exceed a company's cost of capital could indicate that prices are higher than would be found in a competitive market. ROCE figures need to be treated with particular caution as they are dependent on assumptions regarding both the return and the capital employed figure. In respect of the capital employed figure, assumptions have to be made regarding assets on the balance sheet and, potentially, assets that do not appear on the balance sheet (including, for example some costs relating to customer acquisition). However, based on a measure of ROCE that excludes 3G spectrum costs, Ofcom has estimated that in recent years the industry as a whole has made a ROCE of around 17%, which exceeds Ofcom's estimates of the capital for the industry.

### **Termination charges**

- 2.28 All 2G/3G MNOs now terminate some voice calls using their 3G network, and H3G continues to use national roaming to terminate some calls on O2's 2G network (see paragraph 2.30 below). However, the five MNOs' wholesale billing systems do not distinguish on a call by call basis between calls terminated on 2G and 3G networks (and a call may even switch between the two networks while in progress if the called party is moving). All MNOs charge the same charge for both forms of termination, although that charge varies by time of day and week. As explained in more detail in paragraph 2.31 below, the contractual charge is implicitly a blend of underlying 2G and 3G charges. The blended contractual charges for wholesale voice call termination levied by each of the five MNOs are set out in the left hand column of Figure 2.1 below

### **Blending of regulated 2G and unregulated 3G termination charges**

- 2.29 Volumes of termination on 3G networks by the 2G/3G MNOs remain low. MNOs have asked that the proportion should not be published. An understanding of the order of magnitude can be gained by noting that no 2G/3G MNO has more than about 10% of its customers connected to 3G phones (the proportion of voice minutes terminated on 3G will be lower as calls to 3G phones which are outside the MNO's 3G coverage area will be terminated using the 2G network). However volumes are growing.
- 2.30 H3G has in place two contracts for national roaming to provide coverage for voice, SMS and certain GPRS services when H3G customers are not somewhere they can connect to H3G's own 3G network. The proportion of calls which are received and made in this way has been falling and is expected to continue to do so as H3G further rolls out its network. H3G stated in March 2006 that its 3G network now provides 88% population coverage.
- 2.31 In the case of the 2G/3G MNOs, which are subject to a charge control, the contractual charges referred to in paragraph 2.28 above (and set out in the left hand column of Figure 2.1 below) reflect a blend of underlying regulated 2G and unregulated 3G charges weighted by volumes of each over a measurable period. All 2G/3G MNOs are either actively blending distinct charges for 2G and 3G termination or have proposed (to interconnected parties) revised blended termination charges which are based on distinct underlying charges for 2G and 3G termination (see paragraph 5.50 below). Figure 2.1 below sets out the underlying regulated 2G

charges alongside the contractual blended charges. It should be noted, however, that although the contractual charges are fixed commercially (subject to any future contract variation) and the underlying 2G maximum average charge is fixed by regulation, the assumed 3G charge within the blend can only be an estimate based on the MNO's forecasts of the ratio of 2G to 3G termination minutes within a contractual billing period.

**Figure 2.1 Distinction between regulated 2G charges and contractual blended charges**

	Contractual blended charge (day/eve/w.e)			Underlying 2G charge (day/eve/w.e)		
	Figures implemented or proposed for 1 September 2006 <sup>9</sup>					
Vodafone	8.22	3.34	2.74	7.91	3.22	2.66
O2	6.53	6.47	3.22	6.373	6.31	3.14
Orange	7.5	5.7312	5.7312	7.4	5.1464	5.1464
T-Mobile	9.5	4.181	4.181	9.092	4.0	4.0
H3G	15.62	10.78	2.51	Not applicable		

2.32 The ability to determine the level of unregulated 3G charges within the blend, enables 2G/3G MNOs to set blended charges at the level of their choice (subject to competition law and any commercial considerations). As the proportion of traffic terminated on 3G networks increases, so the blended charges, applicable to all forms of voice call termination, can be expected to rise (absent changes in the assumed underlying 3G charge).

### Number porting

2.33 Technical arrangements, devised by the industry, for delivering calls to phones with ported numbers are such that the termination charge billed is that set by the MNO originally allocated the number, rather than that set by the MNO to whom the user currently subscribes. In total a little over 15% of mobile numbers currently in use have been ported from another MNO. This proportion can be expected to grow as mobile penetration plateaus and MNOs rely increasingly on competing for their rivals' subscribers to increase market share. The proportion of incoming call minutes terminated on ported-in numbers varies significantly between MNOs. This results in further adjustment to the overall average price per minute received by each MNO for call termination. The current impact of the number porting arrangements can be seen in Figure 2.2 below.

### Overall impact of charge adjustments

2.34 In addition to the blending of underlying 2G and 3G charges and termination charges set by the original donor of a ported number, current regulation also requires 2G/3G MNOs to adjust the headline target average charge for 2G voice call termination to

<sup>9</sup> Some of the charges quoted remain the subject of contractual negotiation

reflect changes in traffic profiles. The Weights Adjustment Factor (WAF) forms part of the charge control conditions applicable to each of the 2G/3G MNOs and modifies the headline target average charge for each MNO (respectively 5.63 ppm for Vodafone and O2 and 6.31 ppm for Orange and T-Mobile) taking into account changes in the MNO's traffic profile by time of day/week.

2.35 The overall impact of these three different influences on the charge levied for mobile voice call termination is set out in Figure 2.2 below.

**Figure 2.2 Adjustments to headline regulated charge**

	Vodafone	O2	Orange	T-Mobile	H3G
Headline regulated average charge (2G)	5.63ppm	5.63ppm	6.31ppm	6.31ppm	Not regulated
Regulated 2G charge WAF adjusted	[X ]	[X ]	[X ]	[X ]	Not regulated
Effective rate incl ported numbers	[X ]	[X ]	[X ]	[X ]	[X ]
Average contractual blended charge (ex ported numbers <sup>10</sup> )	[X ]	[X ]	[X ]	[X ]	[X ]

## The European context

2.36 When Ofcom published the June 2004 Statement, the UK was the only NRA to have completed a review of this market under the new European regulatory regime. Subsequently, all EU NRAs (with one exception) which have formally notified their market definition for mobile call termination have, like Ofcom, adopted the Commission's technologically-neutral definition which does not distinguish separate markets for 2G and 3G termination<sup>11</sup>. The one exception, Cyprus, was invited<sup>12</sup> by the European Commission to reconsider its position or at least to monitor closely the market and to analyse 3G termination services as soon as these services become available (there are currently no 3G networks in Cyprus).

<sup>10</sup> Indicative figures based on charges proposed or implemented for 1 September 2006 (see Figure 2.1 above) and historic rather than forward looking traffic profiles

<sup>11</sup> See Commission's website at

<http://forum.europa.eu.int/Public/irc/infso/ecctf/library?l=/&vm=detailed&sb=Title>

<sup>12</sup> See Commission's website

<http://forum.europa.eu.int/irc/Download/khesAKJDmRGGikPF1r2U9ySwTZP1Z3m-fv1Cu-yITHuU9qbGX3kMpf4n1-0Jd-d2ro21ETUp2UxVqIIDj3h0IF5/CY%20333-334%20decision%20EN%20public.pdf>

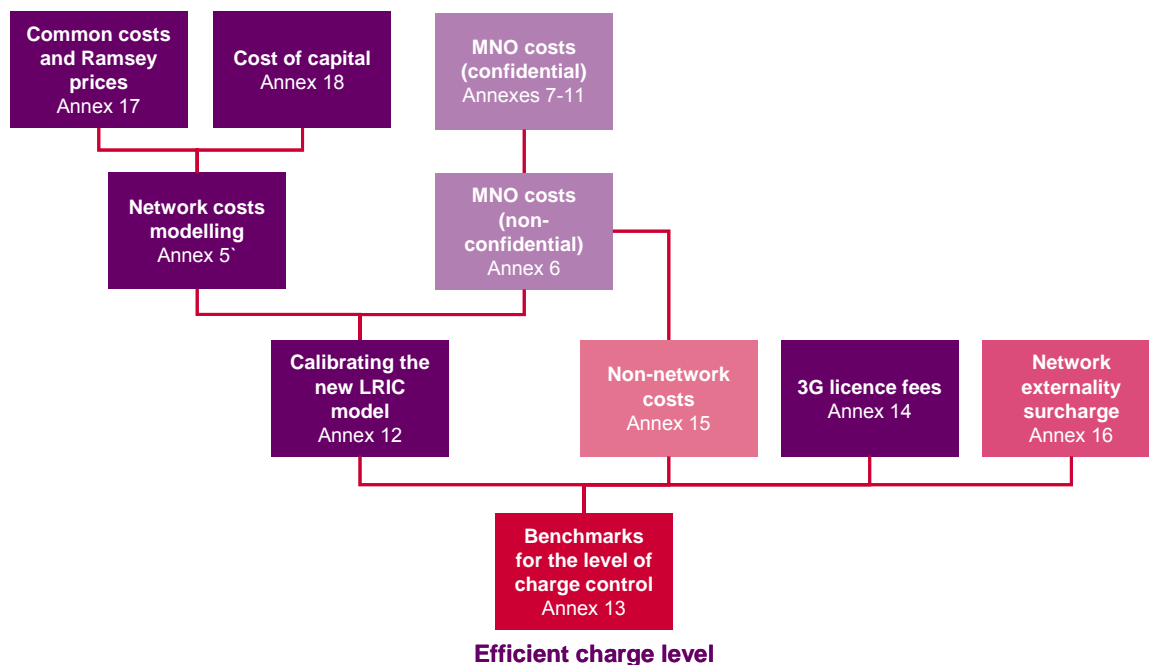
- 2.37 All NRAs which have considered the issue so far, have also found that all MNOs have SMP (including, in some cases, MVNOs which have control over termination charges).
- 2.38 No NRA, other than Ofcom, however, has imposed different remedies in respect of 2G and 3G termination, and no NRA has set different charge caps to apply to 2G and 3G termination by the same MNO. It should be noted that in June 2004, when Ofcom imposed charge controls only on 2G voice call termination, no 2G MNO was using 3G networks to terminate voice calls. H3G, which was using its 3G network to terminate voice calls, still had less than 1% of the mobile subscribers in the UK. Consequently, Ofcom determined that there was insufficient evidence to conclude that regulation of 3G termination charges was a proportionate approach. Any adverse effects on consumers were likely to be small given H3G's very small subscriber base relative to the wider mobile sector. As noted above, all 2G/3G MNOs now terminate some voice calls on their 3G network and H3G's subscriber volumes have increased greatly.
- 2.39 All NRAs, other than Ofcom, have now either proposed or imposed SMP conditions on all MNOs, requiring that charges (including 3G charges) are fair and reasonable, cost oriented or in compliance with a specified charge control. The proposals recently published by the German NRA, that MCT charges should be "approved" by the NRA, take a slightly different form. Ofcom's decision in June 2004 not to impose any such controls on the MCT charges of H3G or on the charges for 3G MCT offered by 2G/3G MNOs is unique and, as noted above, reflects the very low level of 3G network rollout at the time.
- 2.40 In all jurisdictions (except the UK) where a new entrant 3G MNO is active, the NRA has sought to designate the new entrant as having SMP and has sought to control the new entrant's MCT charges requiring that MCT charges are fair and reasonable, cost oriented or in compliance with a specific charge control. Sister companies of H3G are active as recent entrants offering MCT in Austria, Denmark, Sweden, Italy and Ireland, as well as the UK. In many of these jurisdictions, however, these companies have challenged the proposals.

### Structure of the consultation document

- 2.41 The rest of this consultation document sets out Ofcom's market analysis and regulatory proposals for MCT from 1 April 2007:
- **Section 3** sets out Ofcom's analysis of the relevant markets;
  - **Sections 4 and 5** set out Ofcom's SMP analysis with Section 5 dealing specifically with the issue of countervailing buyer power;
  - **Section 6** sets out Ofcom's duties and objectives in the review as a framework for developing Ofcom's regulatory proposals;
  - **Section 7** sets out the benefits of regulation and discusses the different issues associated with unregulated MCT charges. **Annex 19** provides further detail of Ofcom's welfare analysis that is specifically referred to in this section;
  - **Section 8** discusses the different regulatory remedies Ofcom has considered in this review;

- **Section 9** discusses in detail specific charge controls that Ofcom is proposing to impose. **Annexes 5-18** are concerned with Ofcom’s estimation of the cost of MCT and inform the level of the charge controls that are proposed in Section 9. The diagram below sets out how these cost modelling annexes fit together in estimating the costs of MCT:

**Figure 2.3 Cost modelling annexes**



- **Section 10** summarises Ofcom’s regulatory proposals and **Annex 21** sets out draft conditions based on the regulatory proposals; and lastly
- **Annex 20** sets out responses from stakeholders to the March 2006 consultation. These responses are discussed throughout the consultation document.

## Section 3

# Market definition

- 3.1 The service considered in this review is wholesale voice call termination on individual mobile networks ("MCT"). This is market 16 in the Commission's Recommendation.
- 3.2 Call termination is the service necessary for a network operator to connect a caller with the intended recipient of the call on a different network. If call termination was not available a network operator could only terminate calls to other customers on its own network. This service is referred to as wholesale because it is sold and purchased by network operators rather than retail customers.
- 3.3 The European Commission is reviewing the Recommendation and is consulting on a proposal, amongst others, that market 16 should be widened to include termination of SMS. SMS termination is not being considered within the present market review as Ofcom considers (discussed in paragraph 3.84-3.88 below) that it is a limited substitute for calling a mobile. Ofcom plans to review SMS termination separately next year.
- 3.4 This review considers only wholesale voice call termination on mobile networks in the UK. At present there are five suppliers of wholesale voice call termination on mobile networks in the UK. These are Vodafone O2, Orange, T-Mobile and H3G. These suppliers currently use 2G and 3G mobile networks. In the future it is possible that they may use other mobile network technologies to supply wholesale mobile voice call termination. Where these MNOs use other technologies to supply MCT, such MCT would be deemed to be included in the market defined by the present review. In the future, and potentially within the forward looking period of this review, it is also possible that there will be additional suppliers of wholesale voice call termination on mobile networks. Moreover, the programme of liberalisation of spectrum in the UK (including auctions of vacant spectrum bands) may result in the emergence of new mobile network operators and also, potentially, new providers of public wireless local access networks (WLANs). Ofcom will monitor such developments and, as recommended by MNOs responding to the March 2006 Consultation, will consider at what stage further markets should be defined and reviewed.
- 3.5 In the March 2006 Consultation Ofcom presented a proposed view that there are separate markets for mobile voice call termination supplied by each of the UK MNOs to other originating communications providers. Non confidential responses from fixed network operators BT and C&W agreed with this proposed view [38]. In contrast, each of the 2G/3G MNOs argued that mobile voice call termination is part of a wider cluster market including outbound services. H3G argued that Ofcom had not undertaken sufficient analysis to reach its proposed conclusion, but made no specific alternative proposal of its own.
- 3.6 H3G also noted that, as Ofcom is defining individual markets for termination supplied by each MNO it should consider whether there is any difference in relation to the customers of each MNO. Ofcom agrees with this observation. Although the market conditions under which each of the five UK MNOs supplies MCT (including market shares and barriers to entry) are necessarily very similar, Ofcom has considered whether other factors which may vary between MNOs (including the views and behaviour of customers) are such that markets should be defined differently in respect of the MCT supplied by each of the MNOs.

## Approach to product market definition

- 3.7 The narrowest possible market definition is wholesale voice call termination to a specific mobile number (or subscriber). In the rest of this section, a discussion of demand-side substitution, supply-side substitution and the existence of common pricing constraints is presented in order to see whether this narrow market definition should be expanded to include other products. This analysis is undertaken in relation to calling any of the MNOs' networks. Where there are specific issues relating to particular MNOs these are discussed, for example in relation to dual handset ownership which H3G has proposed is an important factor for it. Ofcom's approach to market definition follows that set out in the Commission's Guidelines on market analysis and assessment of significant market power.<sup>13</sup>

## Demand-side substitution

- 3.8 To assess whether there are any demand-side substitutes that should be included in the relevant market, it is necessary to examine the effect on the profitability of a terminating operator of an increase in its termination charge. To perform this exercise Ofcom has assessed the effect on both retail consumers and wholesale customers.

## Retail demand-side substitution

- 3.9 Demand for termination is a derived demand in that it comes from a fixed or mobile originating network operator on behalf of a customer who has originated a call. Therefore changes in termination charges may be expected to feed through to fixed and mobile retail prices for calls to mobiles.
- 3.10 In principle, the greater the degree of competition in retail fixed and mobile call origination and the greater the cost of termination within the fixed and mobile retail call cost stack, the more increases in termination charges will feed through to fixed and mobile retail prices respectively. Where retail operators offer a broad basket of retail services, and where competition (or regulation) drives out excess profits, there may be a diluting effect in the relationship between the marginal costs of calls to mobiles (which includes the wholesale mobile termination charge) and the retail price of calls to mobiles. The extent of pass-through of increased termination charges to retail prices could well be less than one-for-one, even for retail operators without SMP.
- 3.11 The extent of pass-through of changes in wholesale mobile termination charges to retail prices is important from the perspective of retail demand-side substitution. The lower the level of direct pass-through to retail prices, the less exposure retail customers have to changes in the wholesale termination charge. Therefore they have less incentive to switch to alternative ways to call and, hence, the less constraint their behaviour is likely to exert (via the derived demand from their operator, whether fixed or mobile) on a hypothetical monopolist of wholesale voice call termination.
- 3.12 Ofcom reported in the March 2006 Consultation that, overall, around two-thirds of recent reductions to termination charges have been passed through directly to retail prices for fixed originated calls to mobiles. However, as Ofcom acknowledged, the level of direct pass-through achieved by BT was much higher than that of other providers of fixed to mobile calls, thereby contributing significantly to the overall

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<sup>13</sup> "Commission Guidelines on market analysis and assessment of significant market power under the Community regulatory framework for electronic communications networks and services" (See [http://europa.eu.int/eur-lex/pri/en/oj/dat/2002/c\\_165/c\\_16520020711en00060031.pdf](http://europa.eu.int/eur-lex/pri/en/oj/dat/2002/c_165/c_16520020711en00060031.pdf) )

average figure. Furthermore, as T-Mobile highlighted in its response to the March 2006 Consultation, BT's assurance, that it would pass through the great majority of reductions in MCT charges directly to the price of fixed to mobile calls, will expire at the end of 2007. To the extent that direct pass-through is materially less than 100%, the behaviour of retail customers, the called and calling parties, in response to a retail price increase in calls to mobiles arising from an increase in wholesale voice call termination charges may impose less competitive constraint on wholesale termination charges than would otherwise be the case. This issue of pass-through is discussed again in paragraphs 7.18 to 7.21 in relation to the detriments of excessive termination charges.

### **Behaviour of the called party in response to an increase in the retail price of calls to mobiles**

- 3.13 There would be a constraint on termination charges if mobile subscribers chose their network on the basis of the prices of incoming calls and switched network as a result of an increase in these prices. If this were the case, this would support the MNOs' proposal that MCT is part of wider cluster market for mobile services in general. However, the calling party pays ('CPP') arrangement adopted in the UK telephony market has a notable impact on mobile subscribers' sensitivity to the price of incoming calls.
- 3.14 Under the CPP arrangement, the calling party (and not the called party) pays the total price of a retail call (unless partial or full receiving party pays ("RPP") arrangements apply, as happens in the UK with Freephone and special low cost call types). This means that the voice call termination charge is included in the originating network provider's (either fixed or mobile) cost base and is reflected in the retail price it sets for calls originating on its network. CPP leads to a disconnection between the person paying for a call (i.e. the calling party) and so, indirectly, for the termination charge and the person who makes the choice of the terminating network which sets the termination charge (i.e. the called party).
- 3.15 The overall effect of this arrangement in the retail market (i.e. the market for calls from fixed to mobiles and the market for calls from mobile to mobile) is that, while MNOs have an incentive to keep the price of those services paid for by mobile subscribers at a level to attract and retain customers, they do not have the incentive to keep the price of fixed and off-net calls to their subscribers low.
- 3.16 Nevertheless, it is still possible that mobile subscribers might respond to a rise in the termination charges of the MNO to whom they subscribe, by switching to a network with lower termination charges, if they expected and were concerned that the higher price of calling them would have an impact on their callers. For this to be true, Ofcom considers that the following conditions would have to be met:
- mobile subscribers should value incoming calls to such an extent that a sufficient reduction in these calls (see below) induced by a price increase, in turn induces subscribers to change network;
  - callers must be sufficiently aware that they are calling a mobile and that they are calling a specific network;
  - callers must be sufficiently aware of the price of calling that particular network;  
and

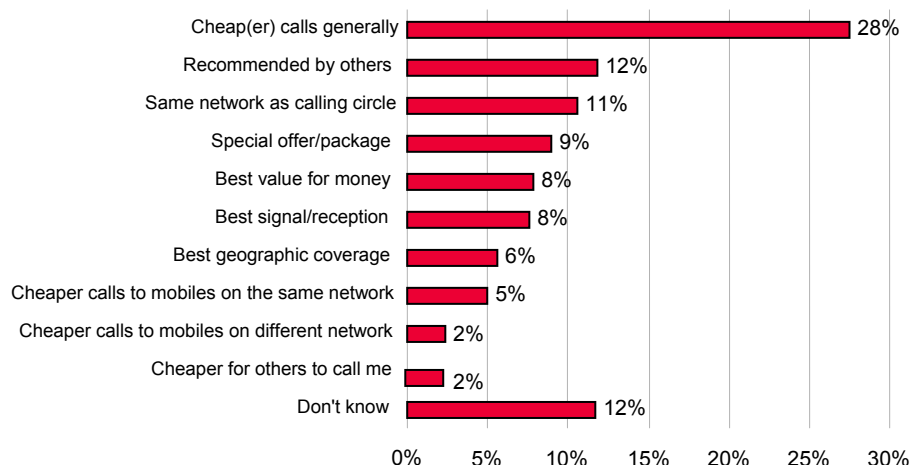
- callers must be sensitive to changes in the prices of calling the network they want to reach.
- 3.17 Ofcom considers that only if all four of the above conditions are met could the behaviour of mobile subscribers act as a competitive constraint on mobile termination charges; MNOs that increase charges would risk a loss of users on their networks. Mobile subscribers (in relation to the first bullet) are discussed below. Callers to mobiles (in relation to the second, third and fourth bullets) are discussed under 'Behaviour of the calling party in response to an increase in the price of calls to mobiles'.
- 3.18 In summary, for the reasons set out in the paragraphs which follow, Ofcom takes the view that the price of incoming calls is not considered by consumers to be an important factor in their choice of a mobile network. Consumer awareness of the price of calls to mobile phones is limited, especially in respect of the price of calls to each specific network. Therefore the behaviour of the called party in response to an increase in the price of calls to mobiles does not provide a sufficient competitive constraint on termination charges.
- 3.19 In assessing the behaviour of consumers, as set out in the following paragraphs, Ofcom has taken into account evidence from the following surveys (which are referred to and defined in the following paragraphs);
- Surveys referred to in the Competition Commission's 2003 report ("CC's 2003 Report")<sup>14</sup>
  - Surveys of residential and SME consumers conducted for Ofcom during February 2005, and
  - A survey of residential customers conducted for Ofcom in January 2006
- 3.20 Ofcom carried out a survey of residential and SME consumers during February 2005<sup>15</sup> ("the February 2005 survey"). In this survey it was found that when residential subscribers were asked what their considerations were when making their network choice, only one in fifty (2%) spontaneously said that they considered whether the network was cheaper for others to call. However, it is possible that the cost to others of calling them may have been taken into account when deciding to choose the same network as their calling circle (one in nine (11%) referred to this factor) and may also have been reflected in the consideration that calls within the same network may be cheaper (one in twenty (5%) noted this factor). Figure 3.1 below presents the full set of considerations indicated by residential consumers choosing their network provider themselves.

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<sup>14</sup> Competition Commission's "Mobile phone charges inquiry", 2003 (see <http://www.competition-commission.org.uk/inquiries/completed/2003/vodafone/index.htm> )

<sup>15</sup> Findings from these surveys were presented in Annex 2 of Ofcom's consultation document "Wholesale mobile voice call termination markets – a proposal to modify the charge control conditions", 7 June 2005 (see <http://www.ofcom.org.uk/consult/condocs/wholesale/wholesale.pdf> )

**Figure 3.1 Spontaneous considerations when choosing network**



February 2005 survey, Base: Adults aged 16+, mobile phone users and choosing network provider themselves (1,413)

- 3.21 As shown in Figure 3.1 above, the most frequently mentioned factor in residential consumers' network choice was found to be "cheap(er) calls generally".
- 3.22 When specifically prompted as to whether the cost of others calling them was a consideration in their choice of network, overall only one in nine (11%) residential subscribers said they found out how much it would cost other people to call their network. Only one in ten (10%) said that the cost for other people to call them was a significant consideration.
- 3.23 The CC's 2003 Report (paragraphs 2.134 – 2.135) noted that the cost of incoming calls was not an important factor for consumers when choosing their mobile network. It ranked 10th out of the 14 factors suggested, the most important being "the price you pay to call others". In addition, just under two thirds (61%) of mobile users expressed more concern about the cost to them of calling others than the cost to others of reaching them. Only 9% were more concerned about the cost to others (paragraphs 2.133 to 2.135). At the time, these findings were consistent with surveys of residential customers commissioned by two of the MNOs and presented at the CC inquiry. O2's NOP survey found that for nearly three quarters (75%) of respondents the cost to other people of calling them on their mobile phone was an unimportant factor when they decided which mobile network to join. Under one fifth said that it was important. High proportions (85%) of both categories were unable to say why they took the view they did (paragraphs 2.133 to 2.135). An NOP survey commissioned by Vodafone showed that the price of outgoing calls was much more important to mobile users than the costs that others incurred to call them (paragraphs 2.133 to 2.135).
- 3.24 H3G in its response to the March 2006 Consultation argued that it is not sufficient for Ofcom to rely on market research relating to the views of the generality of mobile users as there may be material differences between the customers of different MNOs. [X]
- 3.25 [X]

3.26 [REDACTED]

3.27 [REDACTED]

3.28 [REDACTED]

3.29 In Ofcom's view, the research evidence presented by H3G does not indicate that the ability of some H3G customers to receive calls on an alternative network is used in a manner which would constrain charges, even if in practice a significant proportion of inbound calls to those customers are terminated by a network other H3G's. The ability of a larger than average proportion of H3G's customers to receive calls on a mobile phone connected to another network may impact H3G's overall termination revenues (in that H3G does not receive payment for terminating those calls). However, it will not impose downward pressure on H3G's termination charges as the choice of terminating MNO, for most subscribers, is not influenced by termination charges. This is because the four factors set out in paragraph 3.16 do not all apply for most subscribers.

3.30 O2 in its response to the March 2006 Consultation, and in its response to the Preliminary Consultation, reported that O2 Germany's Genion service allows subscribers to be contacted on their mobile phone on either a geographic number or a mobile number. It is the Genion customer who decides which number(s) he provides to each contact. Callers using the mobile number are charged mobile call rates and those using the geographic number are charged lower geographic call rates. O2 explained that where the call is made to the mobile number, the called party incurs no charge to receive the call (i.e. as per the general situation in the UK), Where the call is made to the fixed number, here too the called party incurs no charge where the phone is within its 500 metre home zone. Where, however, the phone is beyond the home zone (and the call is made to the geographic number) the called party pays a supplement to receive the call.

3.31 O2 reported that, despite the possibility that the Genion customer may face charges to receive calls (where a call is made to the geographic number when the phone is beyond the home zone), Genion customers do provide contacts with their geographic number. [REDACTED].

3.32 Ofcom notes with interest the data supplied in respect of O2 Germany, but observes that there is no comparable use of fixed/mobile services in the UK, although there are signs that such services are starting to be developed. Furthermore, given the results of its own market research, that the cost to others of calling them is not a primary criterion when selecting a supplier of mobile services, Ofcom does not agree with O2's view that the behaviour of O2's Genion customers in Germany means that subscribers in the UK are concerned about the cost of others calling them.

3.33 Overall it appears that the attitudes of the residential mobile subscribers of each of the five UK MNOs towards the cost of others calling them is not a major consideration in their choice of mobile network. Therefore these subscribers are unlikely to impose a competitive constraint on the termination charge by switching to networks with cheaper termination charges. Looking forward, and assuming that the CPP arrangements persist in the UK, it is difficult to see why mobile subscribers may become more sensitive to the cost of others calling them and begin to offer a competitive constraint to termination charges.

3.34 The existence of closed user groups i.e. groups of people whose members care about the cost to the other members of calling their mobile number, could ameliorate

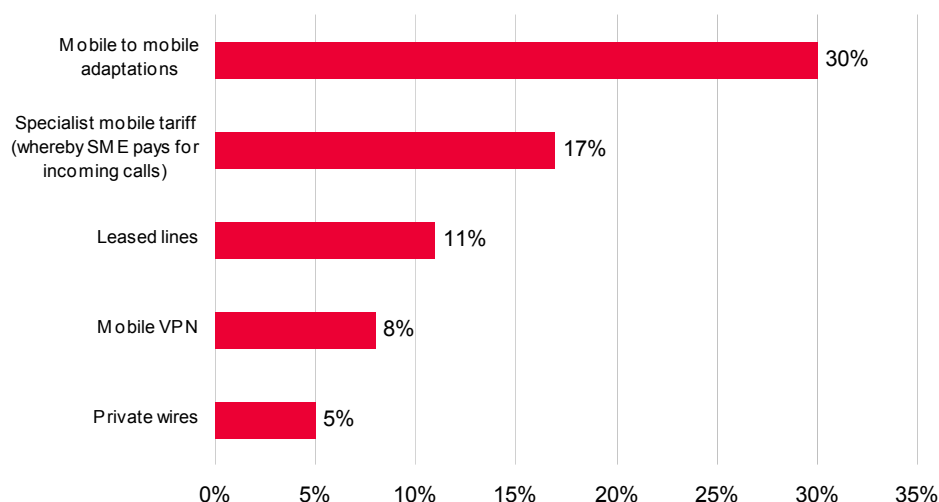
the effect of the CPP arrangement and act as a constraint on voice call termination charges. However, for this constraint to be effective these groups should be numerous and not capable of being isolated through targeted tariffs that bypass the usual termination charges. As discussed above, the evidence available shows that few groups of people are sensitive to the cost of incoming calls. Moreover, those that are can be targeted with tariffs which bypass the usual termination charges (see paragraph 3.41 below). Therefore Ofcom takes the view that closed user groups do not provide a sufficient competitive constraint on termination charges.

- 3.35 The minority of subscribers who are concerned about the impact of high mobile termination charges on the behaviour of callers generally, may be able to mitigate the impact by using call diversion services, including personal numbering services (“PNS”). To a degree, such services enable the called party to decide how much callers should be charged for calling them (provided that, in some instances, the called party is willing to contribute to the cost of incoming calls). However, call diversion services are fundamentally more expensive than calls direct to mobile numbers because (a) their routing is indirect (calls to a personal number go to the PNS provider first, which then forwards them to the appropriate terminating network) and (b) they require access to some form of database which is used to determine the called party’s preferences for termination. In any event, where calls are diverted to a mobile phone, the MNO’s standard mobile termination charge is payable, either by the caller in the cost of the call or, in whole or in part, by the called party within the cost of the call diversion service.
- 3.36 Whether offered on a CPP or RPP basis, the higher cost suggests that it is unlikely that PNS could represent effective substitutes to calls to mobile phones for called and calling parties. This service may be attractive to those subscribers who are sensitive to the price payable by others to call them on their mobile. However, the MNOs will typically have already separated these subscribers from the generality of subscribers by offering them specially targeted tariffs (discussed at paragraph 3.41 below). Therefore, Ofcom believes that automatic call forwarding services do not currently generate significant pressure on the level of mobile voice termination charges.
- 3.37 Business users, in particular small and medium sized enterprises (‘SMEs’) with up to 250 employees appear to be more concerned than residential users about the cost of calling their mobiles.
- 3.38 In the February 2005 survey, one in three (33%) SMEs<sup>16</sup> owning or renting mobile phones said that they chose the mobile network that was cheapest to call - and an additional fifth (18%) said that they would consider doing so in the future.
- 3.39 Also in the February 2005 survey, one half (53%) of SMEs indicated that they had taken additional steps to reduce the cost of calling their mobiles (see Figure 3.2 below).

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<sup>16</sup> Base, UK SMEs owning/renting mobiles phones (585)

**Figure 3.2 Steps taken to reduce cost (to other people) of calling their mobile phones, prompted (Proportion of SMEs taking steps)**



February 2005 survey, Base: UK SMEs owning/renting mobile phones having taken steps to reduce the cost of calling their mobiles (255)

- 3.40 As mentioned above, closed user groups do not generate sufficient competitive pressure to constrain the level of termination charges because the MNOs can separate them from less sensitive customers by offering special arrangements that by-pass standard termination rates. By separating out some or all of the more price-sensitive customers, the MNOs limit the constraint on the termination charge from the more price-sensitive customers. This means that they face even less competitive pressure in setting charges for the other customers. The examples given in Figure 3.2 above e.g. Private wire, Mobile VPNs, Leased lines, Special tariffs and Mobile-to-mobile adaptations, are examples of such arrangements that segment the market in this way.
- 3.41 The costs of private wire services and mobile-to-mobile adaptations are such that it is likely that they will be introduced only where the savings from lower prices for calls to mobiles outweigh the costs of installing them. This, in turn, is likely to occur only where a sufficient proportion of the fixed line originated phone calls of the customer is directed to a single mobile network (such as, for example, mobile phones used by a business's own workforce). They are unlikely to be an effective substitute to standard fixed-to-mobile calls for residential consumers. However, as mentioned above, the main reason why their presence is unlikely to constrain termination charges for fixed-to-mobile calls generally is that they constitute a targeted tariff aimed at separating out the most price-sensitive customers. On-net pricing can also have the effect of separating more price sensitive callers from applying pressure on termination charges. This may result in subscribers seeking to subscribe to the same network to take advantage of cheaper on-net calls. Therefore, in general, targeted tariffs do not impose a competitive constraint on the prices which operators can charge for calls to less price sensitive customers.
- 3.42 If mobile users, generally, could receive their incoming calls on mobile networks other than the one to which they subscribe for making outbound calls, this could put some pressure on mobile voice termination charges. For this form of substitution to take place, the called party must be able to switch his handset between different

networks (or hold active mobile phones connected to more than one network). This is possible through the use of multiple SIM cards.

- 3.43 A subscriber can have a mobile phone with an internal multiple SIM card-holder that allows him to switch from one network to another. There are devices available in the UK market which allow customers to use different SIM cards in the same handset and switch between networks. However, to place some pressure on the MNO with high termination charges the subscriber should, by default, be on the network with cheap voice call termination charges and only switch to the other network to make cheap outbound calls. The process of switching networks is currently laborious and time-consuming as it requires manually switching by the user. In addition, it relies on the called party having the incentive to change network potentially every time he needs to make a call and to switch back again at the end of the call, so that the next inbound call will use the network with lower termination charges. It is doubtful that such an incentive currently exists given the CPP arrangement and customer behaviour described above. It is more likely that subscribers currently exploit the multiple SIM card opportunity mainly, if not exclusively, to take advantage of differences in the prices of outgoing calls.
- 3.44 As a variation on SIM card switching, subscribers could hold more than one mobile phone and provide the mobile number with the lowest incoming call price to those that call them. In this way mobile subscribers could combine their preference for cheaper outbound calls whilst at the same time ensuring that those that call them pay the lowest price.
- 3.45 In January 2006 Ofcom commissioned a survey of residential customers<sup>17</sup> (“the January 2006 survey”) and found that of those personally using a mobile phone, approximately one in nine (12%) said they had more than one mobile phone number or more than one SIM card that they currently used. This is a relatively low proportion of mobile subscribers. Furthermore, when asked why they had more than one number or SIM card two fifths (44%) of these subscribers said it was to split business and personal calls with the next most popular reason being to split calls made to different mobile phone networks, approximately one in eight (12%) giving this response. No respondents suggested they had more than one mobile phone or SIM card in order to receive calls to a different number and thereby reduce the cost to others of calling them.
- 3.46 As noted earlier, the sample size of this particular survey was too small to provide a robust indication of whether the customers of H3G are more likely than others to use more than one number or SIM to reduce the cost to others of calling them, as H3G had suggested might be the case, in its response to the March 2006 Consultation.
- 3.47 [§<]
- 3.48 [§<]
- 3.49 In its response to the March 2006 Consultation, H3G argued that the key issue, in relation to market definition, is not why H3G customers choose to keep two phones but, rather, whether calls are received on that other network. Ofcom does not agree. The callers’ ability to contact an H3G customer without using H3G’s network will not impose a constraint on H3G’s ability to levy excessive termination charges unless the behaviour of those callers can be expected to change as H3G’s CTM charges

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<sup>17</sup> The findings and questionnaire concerning Ofcom’s January 2006 survey were set out in Annex 6 of the March 2006 Consultation.

change. If callers do not have the characteristics set out in paragraph 3.16 above, they may, for other reasons, contact H3G customers on an alternative network, but they will not impose a constraint on H3G's CTM charges. As such, this will have no bearing on Ofcom's market definition which relates to termination on individual networks.

- 3.50 In theory, an automatic mechanism to re-route calls can also be conceived of so that subscribers can choose which operator terminates their calls. Such a mechanism would instruct the called party's mobile phone to switch network automatically when a call is arriving. No such mechanism currently exists and, in Ofcom's view, the prospects for such a development are low during the period covered by this review (4 years from March 2007). This is due to significant technological difficulties and to the lack of incentives on the part of the called party to make use of a facility that reduces the cost of incoming calls. In addition, a further hurdle is posed by the need for MNOs to allow access to their handsets/SIM cards to install the necessary software (as well as allowing any necessary signalling to pass across the mobile network to control network selection). The MNOs have little incentive to co-operate in this way.
- 3.51 The main limitation of both manual and automatic SIM switching, and owning more than one mobile phone, is that all rely on the called party having an interest in reducing the cost to other persons of calling his mobile. It seems unlikely that mobile subscribers place pressure on the cost of calling them through owning multiple SIM cards or phones. At present these subscribers make up a small proportion of subscribers and are motivated by the same underlying incentives as most mobile subscribers, which is to take advantage of differences in the prices of outgoing calls or separate billing arrangements.
- 3.52 Having considered the behaviour of called parties in response to an increase in the price of calls to mobiles, Ofcom has concluded that, over the period of this review, the behaviour of called parties is unlikely to constrain MNOs' ability to set excessive wholesale termination charges.

### **Behaviour of the calling party in response to an increase in the retail price of calls to mobiles**

- 3.53 As discussed in paragraph 3.11 above, the extent of pass-through of changes in wholesale termination charges to retail prices will affect the competitive constraint that callers to mobiles may impose on termination charges. If pass-through were significant, callers may impose a competitive constraint if callers react to an increase in the retail price for calling mobiles by employing other means of communication to reach mobile subscribers. This form of substitution could act as a competitive constraint on wholesale voice call termination charges. Whether it would act as a sufficient constraint would depend on the amount and nature of substitution that takes place. The MNOs' behaviour would be affected only if the behaviour of calling parties was sufficient to make the increase in the wholesale charges unprofitable. However, for callers to react to an increase in the price of calls to mobiles, it is Ofcom's view that three conditions need to be satisfied:
- callers must be sufficiently aware that they are calling a mobile and that they are calling a specific network;
  - callers must be sufficiently aware of the price of calling that particular network; and

- callers must be sensitive to changes in the prices of calling the network they want to reach, i.e. an increase in the termination charge above the competitive level must cause consumers to adapt their behaviour to find an alternative satisfactory way of contacting the person they want to call.
- 3.54 Ofcom's view on these three criteria is that none of them is sufficiently met for calling parties to act as a competitive constraint on call termination charges. The reasons for this are discussed below.
- 3.55 Furthermore, different retail consumers face different retail costs of calling a mobile. For example a caller who has purchased a number of calls to mobiles as part of a bundled subscription package faces a different marginal cost of calling compared to a caller who has used up his bundled minutes or who purchased a subscription without inclusive minutes. It is likely that callers with bundled minutes would be less sensitive to changes in the price of calling and therefore impose less of a competitive constraint on wholesale termination charges. Ofcom considers this could mean that many callers are not particularly sensitive to increases in termination charges. Whether or not this is the case, Ofcom still considers that calling parties do not impose a competitive constraint on the charges for MCT for the reasons set out above.
- 3.56 In its response to the March 2006 Consultation, H3G noted Ofcom's market research which showed that callers are not generally aware of which network they are calling, even though a quarter of callers to mobiles claim to have more than one mobile number for one or more of the people they call. H3G proposed that as H3G is a new entrant entering a saturated market it is relevant to consider whether new customers retain a handset from their old network to receive calls. As explained above, it is Ofcom's view that what is relevant is whether callers who have the ability to choose between more than one mobile network on which to deliver a call, are aware which network(s) they are calling, are aware of any difference in the cost of phoning those different networks (given the varying extent of pass-through and the existence of call bundles) and are sufficiently sensitive to price that an increase in H3G's MCT charge above the competitive level would cause them to use an alternative means of contacting the called party.

### **Awareness of calling a mobile and awareness of calling a specific mobile network**

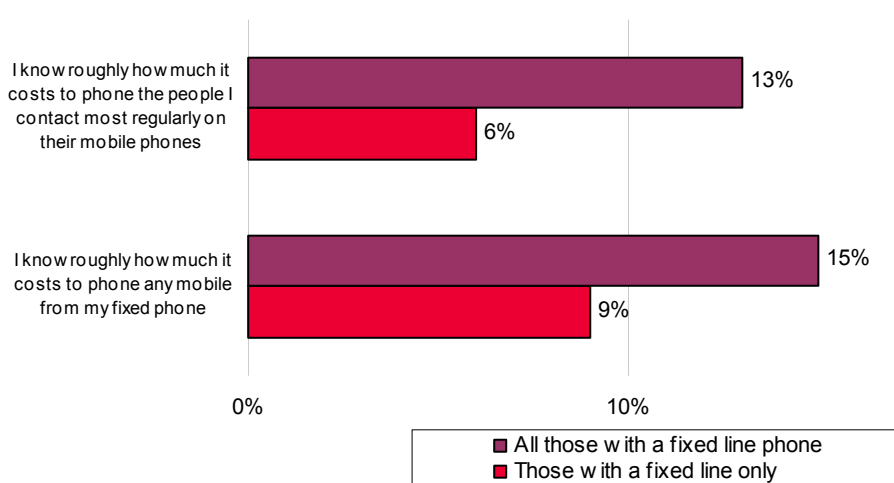
- 3.57 In Ofcom's January 2006 survey residential consumers with a fixed or mobile phone were asked how often they know whether they are calling a mobile phone number. Overall the majority (84%) of consumers claimed to always or mostly know when they are calling a mobile.
- 3.58 In the January 2006 survey Ofcom found that of all consumers making calls to mobiles two fifths (42%) claimed never to know which mobile network they are calling or were unable to give an opinion. In addition, one quarter (23%) claimed rarely to know, one in six (16%) sometimes know and only one fifth (19%) mostly or always know which mobile network they are calling.
- 3.59 These results are consistent with previous survey evidence. In the February 2005 survey Ofcom found that, of mobile phone users which know they are calling a mobile, two fifths (44%) claimed never to know which network they are calling, a quarter (24%) occasionally know, one fifth (18%) usually know and only one in ten (10%) always know.

- 3.60 The CC in its 2003 report collected evidence on consumer awareness of the identity of the particular mobile network they are calling. The CC’s own market research (paragraph 2.136) indicated that on average just under a third (28%) of mobile users said they knew whether they were calling a mobile phone on the same network as themselves. Callers appear to have limited knowledge of which specific network they are connecting to when making a call to a mobile. Over time, this awareness does not appear to have improved significantly.
- 3.61 It appears that there is a lack of knowledge of mobile number ranges and how these are assigned to the different MNOs. In addition, the number portability arrangements render it difficult for callers to find out which network they are calling (and thus what the relevant cost is) unless they have a repeated calling relationship with the person they are calling.
- 3.62 Looking forward over the period to 2011, it is Ofcom’s view that there is no compelling evidence which might suggest that callers’ awareness of which mobile network they are calling will improve significantly.

### Awareness of relative and actual prices

- 3.63 Awareness of the cost of making calls to other mobile phones appears to be limited. In Ofcom’s February 2005 survey it was found that fewer than one quarter (22%) of mobile phone users claimed to know the approximate cost of calling a mobile on the same network as them. This proportion dropped to one in seven (14%) for calls to mobiles on a different network. Of note is that the proportion who claimed to know how much it costs to phone the people whom they contact most regularly on their mobile phones was similarly low (16%).
- 3.64 Awareness is low amongst callers making a call to a mobile phone from a fixed line. Figure 3.3 below highlights the survey results for these callers - one in seven (15%) of consumers with a fixed line phone in their household reported that they knew roughly how much it would cost to call a mobile phone.

**Figure 3.3 Awareness of the cost of calling mobile phones from your own landline**



February 2005 survey, Base: All those with a fixed line phone (2,158), Those with a fixed line only – i.e. no mobile phone (461)

3.65 The data from Ofcom's February 2005 survey is broadly consistent with the results of earlier surveys. The CC referred to this issue in their 2003 report (paragraphs 2.136 to 2.141), which suggested that a large number of callers had little knowledge of the actual prices or the relative levels of charges for calling each network. The CC concluded that these findings overall:

“...reveal a degree of awareness on the part of consumers which is insufficient to enable them to make an appreciable impact on prices or to drive termination charges down to competitive levels” (paragraph 2.141).

3.66 Ofcom's February 2005 survey reveals that callers do not appear to be significantly aware of the cost of calling a mobile from a mobile or a fixed line. The CC's conclusion accords with more recent market research. As discussed in paragraph 3.55 above, the practice of bundling inclusive minutes as part of tariff packages means that some callers face a very low marginal cost of calling. Going forward, it is Ofcom's view that there are no reasons to believe that this awareness will improve significantly over the period to 2011.

### **Callers' sensitivity to changes in the prices of calling a specific network - adapting behaviour**

3.67 Even if, contrary to the evidence currently available, awareness of prices was to grow significantly, competitive pressure will only be exerted on wholesale mobile termination charge if callers are willing to adapt their behaviour through substitution, so that MNOs lose profits on mobile termination if they attempt to raise termination charges.

3.68 There is a range of potential options available to a caller as a substitute for contacting a specific recipient (by calling them on their mobile number). These include:

- mobile-to-fixed call as a substitute for mobile-to-mobile off-net call;
- mobile-to-mobile call as a substitute for fixed-to-mobile call;
- on-net mobile-to-mobile call as a substitute for mobile-to-mobile off-net call;
- SMS as a substitute for mobile-to-mobile call;
- voice over Internet Protocol calls; and
- call-back arrangement.

3.69 Each of these forms of substitution is discussed below in terms of their suitability as a satisfactory means of calling a mobile. There are numerous other means of communicating with an individual, such as other computer messenger services or email. However, Ofcom does not believe that these are significant alternative substitutes for most callers. This is because they are only feasible substitutes for most callers when both caller and called party have access to the required technology at the same time in order for these forms of contact to offer immediate, real time communication.

### **Mobile-to-fixed call as a substitute for mobile-to-mobile off-net call**

- 3.70 Following an increase in the wholesale termination charge and, to the extent that this increases the cost of calling another mobile, a calling party may switch to calling the intended party on a fixed number. However, it is unlikely that a call to a fixed line can represent a satisfactory substitute for calling someone on a mobile network in a sufficient number of instances to act as a constraint on the charges for MCT. In particular, a call to a fixed line is not a viable alternative if the called party is, or is thought to be, away from their fixed line phone, since immediacy of contact is an important feature of calls to mobiles.
- 3.71 In its response to the March 2006 Consultation, H3G commented that this view of the importance of the immediacy of contact with respect to calls to mobiles ignores the fact that significant numbers of calls to mobiles go to voice mail and that this is an accepted feature of calling a mobile. In Ofcom's view, the use of voicemail does not remove this advantage of calling a mobile, as callers may still have a reasonable expectation that they will be called back before the called party returns to the location of his fixed phone.
- 3.72 Ofcom's view is consistent with evidence from Ofcom's January 2006 survey. Callers were asked to imagine themselves away from their home and calling someone on their mobile phone. While just under one third (31%) of callers said that in the last month they had tried calling people on the recipient's fixed phone first (before trying their mobile) in order to reduce the cost of these calls, a lower proportion (14%) reported that, on at least one occasion in the last month, they had waited to call the recipient on their fixed phone rather than calling them on their mobile.
- 3.73 In its response to the March 2006 Consultation, H3G proposed that Ofcom should consider whether this evidence of some callers first attempting to reach a called party on a fixed line, and calling the mobile only when the call to the fixed line is not answered, could indicate that the two types of calls are in the same market. In Ofcom's view, however, this market research indicates, on the contrary, that calls to fixed lines are not adequate substitutes for calls to mobiles where the called party is away from his fixed phone and the caller values immediacy, or near immediacy, of contact. Ofcom recognises, as H3G noted in its response to the March 2006 Consultation, that fixed-mobile converged products may proliferate over the coming years. Ofcom also recognises that this may have an impact on the volume of calls terminated on mobile networks, as such products typically have access to intelligent routing of calls which takes account of the called party's proximity to the various networks available to terminate the call. In Ofcom's view, however, efficient substitution of fixed termination for mobile termination is unlikely to constrain MCT charges, as the significantly higher cost of mobile termination (relative to fixed termination) means that providers of fixed-mobile converged services are unlikely to be persuaded to use mobile termination where fixed termination offers the same utility, even if mobile termination is priced at cost.

### **Mobile-to-mobile call as a substitute for fixed-to-mobile call**

- 3.74 After an increase in termination charges and in the cost of calling a mobile, a caller who previously used a fixed line to make a call to a mobile may continue to call the desired party's mobile number, but from a mobile phone rather than from a fixed one. Ofcom's January 2006 survey found that just under one fifth (18%) of callers reported having used their mobile, rather than their fixed phone, to call a mobile when at home during the last month because they had inclusive minutes to use up and this would reduce the cost of calling.

- 3.75 The ability of this form of substitution to constrain voice call termination charges depends on its effect on the profits from termination services for the network operator. The terminating MNO controls the termination charge for a call originated from a fixed or mobile operator and therefore is able effectively to control the impact such substitution might have on its profits
- 3.76 Mobile-to-mobile on-net call retail prices do not involve a payment to another operator for mobile termination and are generally set at lower levels than off-net calls and so tend to generate lower revenues per minute for the MNOs. In Ofcom's view, for on-net calls to be a viable alternative to fixed-to-mobile calls:
- the caller must know the mobile network they are calling; and
  - the caller must be on the same network as the call recipient.
- 3.77 As discussed in paragraph 3.62 above, awareness of the specific network being called is limited. In addition, mobile subscribers are split between five MNOs, hence, the probability of the caller being able to reach the desired call recipient with an on-net call is substantially less than 100%. The probability that a call remains on-net will broadly reflect the market share of the mobile operator in the outgoing retail market. The fact some groups of customers which frequently call each other congregate on the same network may increase this probability. Ofcom's January 2006 survey revealed that one in seven (14%) callers to mobiles claimed to have called from their mobile rather than their fixed phone in the last month because they knew that the person they are calling is on the same network as them.
- 3.78 However, if a caller knows that they make calls to one network more often than to the others, this could influence the choice of network as subscribers seek to benefit from the lower prices charged for on-net calls. In that case, calling mobile-to-mobile on-net might be an effective substitute for a call from a fixed phone. However, this substitution is unlikely to constrain termination charges because one of the effects of MNOs' tariffs is that they tend to separate the more price sensitive subscribers from the others, e.g. by attracting them with low on-net prices on which the effects of a high termination charge is bypassed. This limits the constraint that the more price-sensitive subscribers impose on the termination charge paid on off-net and fixed-to-mobile calls. This issue was examined in more detail, in paragraph 3.34 above, in the context of closed user groups.

### **On-net mobile-to-mobile call as a substitute for mobile-to-mobile off-net call**

- 3.79 Termination charges for off-net calls could be constrained by substitution to on-net calls. This would require the calling party to be on the same network as the called party or to use more than one network to originate or terminate their calls e.g. by having more than one mobile subscription – in the form of multiple SIM cards or handsets and/or having more than one number on which to contact the called party.
- 3.80 As noted in paragraph 3.43 above, the use of multiple SIM cards is problematic for callers because the process of switching cards (to make different calls) is laborious and time-consuming. In addition, MNOs often lock handsets to the SIM that is originally sold with the handset so that it can only be used on their network. Those factors, and limited consumer awareness of the higher cost of off-net calls - only one in seven (14%) of residential mobile subscribers in Ofcom's February 2005 survey said they knew how much it cost to phone another mobile on a different network - mean that it may be some considerable time before multiple SIM devices generate any significant competitive pressure on voice call termination charges.

- 3.81 As discussed in paragraph 3.45 above, Ofcom's January 2006 survey found that of those with a mobile phone, approximately one in nine (12%) claimed to have more than one mobile phone number or more than one SIM card that they currently use. [38].
- 3.82 In the January 2006 survey it was revealed that one quarter (26%) of callers to mobile claimed to have more than one mobile number for one or more of the people who they call. This offers another opportunity for callers to mobiles to make an on-net call instead of an off-net call if they know which of the mobile numbers is associated with their own network. As already discussed, callers do not have much awareness of which network they are calling. Moreover, the January 2006 survey revealed that two fifths (39%) of mobile subscribers claiming to have more than one number or SIM reported that they were connected to the same network.
- 3.83 Overall, Ofcom considers that substitution of off-net calls by on-net calls is unlikely to provide a competitive constraint on termination charges and could even reduce, rather than increase, the constraint on the general level of voice call termination charges. That is because MNOs, by offering lower on-net call prices, can segment the market by type of customer and separate the more price-sensitive customers from the others who are less price-sensitive. They can then set high termination charges for others (i.e. off-net termination charges). Thus, Ofcom is of the view that the nature and extent of this type of call substitution is not sufficient to act as a competitive constraint on termination charges.

### **SMS as a substitute for fixed or mobile-to-mobile call**

- 3.84 Short message services ("SMS") enable parties to exchange text messages between mobile phones. SMS may also be received on and/or sent from some fixed network phones, and text is sometimes converted to a synthesised voice message.
- 3.85 Ofcom does not consider that SMS is a substitute for calling a mobile. SMS can only be relatively short, because the number of characters allowed in a text message is limited to 160 characters (although some phones now enable the user to link together more than one SMS message). Also, SMS are not sent in real time because, unlike mobile voice calls, SMS are transferred between networks on a store and forward basis, rather than on a 'real time' basis. Therefore, SMS do not guarantee the opportunity for immediate conversation and interaction offered by voice calls.
- 3.86 Evidence from Ofcom's January 2006 survey suggests that some callers do view SMS as a substitute for calling a mobile in order to save money. When asked whether callers had sought to reduce the cost of calling a mobile by sending an SMS instead of calling, just over half (52%) said they had done this in the last month when they were away from their home. When calling from their home the proportion claiming to substitute to SMS in the last month was lower at around two fifths (43%).
- 3.87 Nevertheless, whether or not SMS is a retail substitute for fixed or mobile-to-mobile calls is only relevant if this substitution can have an impact on the terminating MNO's profitability. SMS termination is offered by the same MNO which provides voice termination and, therefore, the terminating MNO could set charges for SMS termination in such a way as to avoid any competitive pressure on its charges for voice termination.
- 3.88 The Recommendation (referenced at the beginning of this section) currently does not envisage that SMS termination is in the same market as mobile voice call

termination, and Ofcom proposes to adopt the same approach on the basis that the functionality offered by SMS means that it is a limited substitute for voice calls.

### **Voice over Internet Protocol calls**

- 3.89 The future impact of VoIP calls during the period of this review to 2011 is not clear. VoIP calls could, in theory, represent an effective substitute, but whether this applies competitive pressure on termination charges depends on whether it is possible to make a VoIP call to a mobile subscriber without incurring a termination charge controlled by the terminating operator. If this is possible, it is conceivable that callers could substitute to this alternative way of contacting a mobile subscriber, thereby providing a competitive constraint on the mobile termination charge. VoIP on fixed networks allows callers to speak via PC broadband connections at very low individual direct call cost, and for this type of call no termination charge is levied. Whether VoIP on mobiles would similarly be cheaper than conventional voice calls will depend on the charging arrangements set by the MNOs.
- 3.90 An individual making a VoIP call only pays to be on-line (which does not include a termination charge) and the target of the call (if he answers the call) similarly only pays to be connected. In a VoIP call both the called and the calling parties pay for the facility to receive/make the call. This is a quite different arrangement to traditional CPP and the concept of a wholesale termination charge no longer exists.
- 3.91 Such a RPP arrangement changes the incentives on the called party and is likely to affect his behaviour, although it is still unclear in what specific manner. For example, it is possible that a called party may not accept VoIP calls because he would have, in part, to pay for them, thereby forcing the calling party to reach him via a standard voice call to his mobile. In this case, VoIP calls would not impose competitive pressure on the level of the termination charges. There is less incentive from a receiver's perspective to accept a VoIP call as opposed to a circuit-switched call, as he pays for the former (partial RPP) but not the latter (CPP).
- 3.92 The constraining effect of VoIP calls to mobiles may also be undermined by the MNOs' behaviour. It is the MNO to which the called party subscribes that sets both the voice termination charges and the price for the Internet connection. That MNO also determines the quality of service (i.e. data delay and bit errors). Hence, it may be feasible to adjust network data quality parameters such that it is acceptable for web browsing and e-mail, but not for voice calls.
- 3.93 It is possible today to originate a call to any mobile phone using VoIP. However, where such calls are addressed to a mobile (or geographic) PSTN phone number the call is terminated using the MNO's voice channel and a standard voice call termination charge is payable. As a consequence, no competitive pressure is applied to mobile termination charges.
- 3.94 However, it is also technically possible to use VoIP to make and receive end-to-end calls on "smart" mobile phones (i.e. phones which incorporate appropriate operating software). In these instances, IP addresses are used to identify the parties to the call. Such calls would typically be carried on the MNO's data channel and users would be charged at the MNOs' data rates; no voice call termination charges would be payable. The ability to make calls in this way, bypassing voice call termination charges, is dependent on the user having the ability to install appropriate software on his mobile phone. It is also dependent on users being able to access, from their mobile phones, the Internet providers which offer VoIP services. There is much debate within the industry as to the extent to which, in future, smart mobile phone

users will be able to access such sites. It is also unclear whether MNOs will develop the ability to price discriminate according to the nature of the data carried (e.g. VoIP). At least one MNO has already advised customers using its data services that these are not intended to be used to convey voice calls and that contractual terms may be enforced requiring customers to cease using data services in this way.

- 3.95 At the moment the future of VoIP calls to mobile numbers is unclear. If these types of call were to become prevalent they could act as a constraint on mobile termination charges associated with traditional circuit switched calls to mobiles. However, at this stage there is insufficient clarity about the likely prevalence and billing arrangements associated with these types of calls in the future for Ofcom to take the view that they are likely to impose a significant constraint on termination charges over the period to 2011. However, if VoIP calls were to become a real substitute for traditional circuit switched calls to mobiles and the billing arrangements for these calls displayed RPP characteristics Ofcom could examine again the impact of these types of calls on the market. The possible future impact of VoIP was discussed in more detail in Section 6 of the March 2006 Consultation, and responses to that consultation have not changed Ofcom's view.

### **Call-back arrangement**

- 3.96 Call-back refers to a situation where the direction of a call is 'reversed' and the calling party is called back by the called party, either in an ad hoc manner or through a commercial scheme. Call-back could render an increase in termination charges unprofitable only if the profitability of outgoing calls is lower than that of incoming calls, and call-back is carried out in sufficient volume.
- 3.97 Ofcom has no compelling evidence of any commercial operators currently offering call-back on calls to mobiles within the UK, such that the practice of ad-hoc call-back might have a constraining effect on voice call termination charges.
- 3.98 It is possible that during the period to 2011 MNOs could introduce a call-back service to offer an alternative to callers to their subscribers. However, Ofcom believes that this form of call-back could not be relied upon, in the period to 2011, to act as a viable constraint on mobile voice termination charges. Firstly, from a caller's and called party's perspective call-back is not as convenient as normal call. Secondly, MNOs have no incentive to introduce a service of a price and a quality such that it could act as an effective substitute for its own monopoly service. In any event, the inconvenience of call-back services, compared with direct calls, is likely to limit the extent to which they may constrain mobile termination charges.

### **Initial conclusions on retail demand-side substitution**

- 3.99 Ofcom considers that there are currently no effective retail demand-side substitutes that, taken individually or acting together, could constrain mobile termination charges to the competitive level. Looking forward over the period to 2011, it is Ofcom's view that there is no clear prospect for changes in the behaviour of mobile subscribers or callers that will impose a competitive constraint on mobile termination. Perhaps the most likely source of competitive pressure may come from VoIP calls to mobiles which, because of the potential difference in billing arrangements, may provide a satisfactory and attractive substitute for making a traditional call to a mobile number. However, as discussed above, it is unclear how VoIP will develop in the mobile sector.

### Wholesale demand-side substitution

3.100 At the wholesale level the very nature of mobile termination means that substitution of wholesale voice call termination on an MNO's network with wholesale voice call termination on a different MNO's network cannot provide any direct constraint on termination charges. An operator wishing to offer calls to a specific mobile number of a customer of a specific MNO must purchase termination from that MNO or it will not be able to terminate the calls. Looking forward to 2011, it is Ofcom's view that there are no prospects for termination to be provided, in relation to calling a specific subscriber, other than by the subscriber's MNO.

### Initial conclusions on wholesale demand-side substitution

3.101 For the reasons listed above, Ofcom considers that at present there are no effective demand-side substitutes for voice call termination to specific subscribers of a particular MNO. On a forward looking basis to 2011, Ofcom believes that there is no compelling evidence which indicates that this will change.

### Supply-side substitution

3.102 Supply-side substitution occurs when, in response to a rise in the price of a product, suppliers of other products would switch into supplying the product whose price has risen and render the price increase unprofitable for the hypothetical monopolist. Supply-side substitution can be examined both at the retail and wholesale level.

### Retail supply-side substitution

3.103 For retail supply-side substitution to impose a constraint on the level of mobile voice termination charges, there would have to be operators which do not currently provide calls to mobiles that can switch into such provision and thus undermine a price set above the competitive level. In order to have such an effect, the new provider(s) would have to be able to provide a service which did not rely on the provision of termination from the MNO to which the called party subscribes. At present, Ofcom takes the view that it is not feasible to offer retail calls to mobile without being reliant on the MNO to which the called party subscribes to terminate such calls.

### Wholesale supply-side substitution

3.104 For wholesale supply-side substitution to be an effective constraint on mobile voice termination charges, there have to be other firms that could switch into the provision of wholesale voice call termination to a specific subscriber of an MNO's network with relative ease in response to an increase in termination charges.

### MNOs other than the one to which the called party subscribes

3.105 Supply-side substitution in the wholesale market could come most easily from other MNOs, which have the necessary network infrastructure and expertise to terminate mobile calls. However, having a mobile network is not, on its own, sufficient for an MNO to be able to terminate calls to a subscriber of a rival network. For this to happen, the mobile phone should be capable of automatically moving from its home network on to that of the alternative MNO on which the call would then be terminated. Ofcom takes the view that at present the lack of access to handsets/SIM details and the technical difficulties in taking control of the handset constitute an effective barrier to an MNO providing voice termination to subscribers of another MNO. On a forward

looking basis to 2011, Ofcom believes that there is no compelling evidence which indicates that this will change.

### **New mobile network operators, Local Area Networks over short-range radio technologies and Wireless Local Area Networks (WLANs)**

3.106 Operators running WLANs could conceivably enter the market for mobile call termination in competition with MNOs and, thus, put pressure on the level of mobile voice termination charges. Ofcom believes that, at present, there are significant technical obstacles that would have to be overcome before such a service could become viable for mobile users. For example, WLAN operators cannot currently offer the same coverage as the MNOs' networks because of the limited range of reception enabled by their equipment, and technical difficulties, in terms of taking control of the called party's mobile phone, will arise. In any event, a further limitation of this scenario, and the scenario of other MNOs offering competing termination services to an extent which would constrain charges, is that it relies on the called party being responsive to the price of inbound calls, such that they would be prepared to incur some cost to reduce the cost to the person calling his mobile (for example by acquiring a multiple SIM handset). At present, the evidence presented in this section suggests that mobile subscribers do not take into consideration to any great extent the price of inbound calls when making their purchasing decisions. Therefore Ofcom takes the view that all of these obstacles would prevent new mobile network operators and WLAN operators from being able to supply voice call termination in competition with each existing MNO.

### **Mobile Virtual Network Operators**

3.107 An MVNO is a firm that provides mobile telephony services to its customers, but does so by using part of an MNO's network. Ofcom understands that, at present, all calls to UK MVNOs' subscribers are routed directly to the host MNO's network and originating operators pay this MNO a terminating charge set by that host MNO. Where an operator has its own allocation of mobile numbers it would be able to control the termination charge for calls made to these numbers. However for the reasons given in the preceding paragraph in respect of providers of WLAN services, in Ofcom's view it is unlikely that such MVNOs could apply competitive pressure to wholesale termination charges set by other MNOs as they are unable to compete to supply termination services, other than the termination of calls to their own customers.

3.108 More broadly, Ofcom is aware that MVNOs with control over wholesale termination charges, and new entrants using alternative technologies, are likely to face similar incentives as MNOs when setting termination charges to the own networks. This is because calling parties and originating operators have no choice but to use that provider's wholesale termination services to deliver calls. For example BT has its own mobile number range, and Ofcom understands that it intends to use these numbers in the future when supplying mobile services, such as BT Fusion. BT has published a charge for terminating calls to this number range and Ofcom understands that, unlike arrangements put in place by other MVNOs, BT will control the level of that charge and will collect termination charges from originating operators. Completion of each call, variously on a host MNO's network or otherwise, will be a matter between BT and the various agencies which may be used to complete the call. Ofcom understands from BT that this number range has not yet been used and, therefore, the termination arrangements described have not yet been put into practice.

- 3.109 Responses to the March 2006 Consultation from O2, T-Mobile, H3G and Orange each argued that Ofcom should take steps now to develop its regulatory approach in relation to the termination services of new entrants which, as T-Mobile noted, may potentially utilise a variety of technologies. Orange warned that failure to consider all potential developments could be discriminatory, and O2 warned that failure to address these issues now will result in subsequent interconnection disputes. [X]
- 3.110 Ofcom shares the concern of these respondents and fully intends that a consistent and non discriminatory approach to regulation of such new entrants should be applied. Ofcom will continue to monitor the market and, in light of developments, will consider what, if any, steps to take, including whether it is appropriate to conduct a further market review in order to define appropriately new markets for mobile termination provided by other operators and to consider whether such providers have SMP in those markets and if so what regulatory remedies are appropriate.

### **Initial conclusion on supply-side substitution**

- 3.111 For the reasons mentioned in paragraphs 3.102 to 3.110 above, Ofcom considers there are no effective supply-side substitutes for voice call termination to the subscribers of a specific MNO.

### **Common pricing constraint(s)**

#### **Aggregating for all termination provided by an MNO**

- 3.112 On the basis of the initial conclusions reached above, there are no demand-side or supply-side substitutes that should be included in the relevant markets. Accordingly, the appropriate market definition might appear to be wholesale voice call termination to a specified telephone number (or subscriber). However, Ofcom considers that it would be wrong to narrow the market definition to this extent, because MNOs currently do not price discriminate between termination charges for calls made to all the different subscribers on their networks.
- 3.113 MNOs can separate the more price-sensitive customers by offering them arrangements that bypass the MCT charge and so take such sales outside the scope of the market, e.g. through a private wire service (or use of on-net calls). These issues have been discussed in the preceding paragraphs on demand-side substitution. However, the MNOs do not currently charge different prices for termination depending on which one of their subscribers is being called. Thus, a common pricing constraint applies to voice call termination to all subscribers on one network. This implies that, if an MNO wishes to lower termination charges for calls to one subscriber, it must in practice lower termination charges for calls to all its subscribers, effectively equalising the competitive pressures placed on all the networks' termination charges. As a result, Ofcom is of the view that the relevant market includes wholesale mobile voice termination to all subscribers of an MNO for which a termination charge is paid.
- 3.114 However, the current mobile number portability arrangements, put in place by the industry, have led to the situation in which an MNO effectively charges a different termination charge for calls to those customers that have ported their number from a different network ('donor network'). In these instances, the termination charge is equal to the donor network's termination charge. Therefore wholesale termination for calls to 'ported number subscribers' are not strictly included in the common pricing constraint. There are two possible approaches for the treatment of calls to subscribers who have ported their number:

- Wholesale voice call termination for calls to ported number subscribers could be included in the same market as the donor network operator; or
- Wholesale voice call termination for calls to ported number subscribers could be included in the same market as the network operator to which the subscriber currently subscribes.

3.115 If the first of these options were followed the situation would arise in which an MNO is supplying a service to its subscribers but the service is included in the market of a different MNO. If the second were followed the rationale for inclusion in the market would not be the common pricing constraint (discussed above). Ofcom proposes to include calls to ported number subscribers in the same market as the network operator to which the subscriber currently subscribes. If Ofcom were to impose remedies on termination charges it would be unusual to impose them on an MNO when it does not supply the service to which the remedy applies. Ofcom recognises that if the current share of calls to ported number subscribers, compared to all calls to mobiles, were to increase in the future this could give rise to anomalous incentives for MNOs as donor operators would be setting the charge for termination supplied by a different operator. Ofcom is currently separately considering its views on the existing MNP arrangements (see paragraph 9.67 below). Should these arrangements change to allow MNOs to set the termination charge for all their own subscribers this would not affect Ofcom's market definition: Ofcom's market definition relates to the supplier of termination rather than the MNO who sets the level of charges.

### **Cluster market for mobile services including termination**

3.116 Termination could be considered as part of a cluster market incorporating all mobile services due to a wider common pricing constraint. This is the view presented, or referred to, by each of the 2G/3G MNOs in their responses to the March 2006 Consultation. If mobile subscribers purchased a bundle of services from MNOs that included voice call termination together with other retail services, even if each element of the bundle were not a demand-side substitute for any of the others, the fact that they are all consumed and supplied together would link them. This is because under these circumstances, MNOs would be competing for customers not on the price of each single service, but on the overall price of the bundle, and the various services would be subject to a common pricing constraint.

3.117 In these circumstances, an MNO would not be able to raise voice call termination charges, while keeping prices for the other services in the bundle at the same level, without seeing its customers switch to another network in response to the increase in the overall price of the bundle. The MNO would, therefore, be able to raise termination charges only if, at the same time, it reduced prices for other services, so as to maintain at the same level the overall price of the bundle. If this was true, an MNO could be constrained in its ability to increase charges for voice call termination although the extent of such constraint would depend upon the level of competition in relation to the provision of the overall bundle. However, as discussed in paragraph 3.33 above, the evidence supports the conclusion that few mobile subscribers consider the prices of incoming calls as well as the prices of outgoing calls, when choosing their mobile network. At present, the MCT charge levied by a subscriber's network is not part of the bundle of services on which MNOs compete for subscribers. Therefore, Ofcom takes the view that the appropriate market definition is not that of a cluster market for all mobile services.

## Two-sided markets

3.118 Ofcom noted in the March 2006 Consultation that MCT can be viewed in the context of a two-sided market in which there are two types of retail customer; called parties and callers. Vodafone and T-Mobile in their responses to the March 2006 Consultation argued that if Ofcom considered its analysis of mobile call termination from this perspective there are important issues related to the competitive constraints faced by MNOs in setting termination charges that need to be taken into account. Vodafone noted that there are two key features of such markets:

- the interdependence of prices on the two sides of the market. Any change to the price on one side will change the price on the other side e.g. if prices on one side are increased they will fall on the other side.
- the absence of a direct relationship between the price of a service on one side of the market and the incremental cost of serving that side of the market.

3.119 In Vodafone's view these principles affect Ofcom's market analysis in two fundamental ways. First, competition in call origination is relevant to the assessment of call termination. Second, two sided markets often have skewed pricing structures where prices on one side may subsidise prices on the other. This affects the analysis of the competitive price level that may efficiently be above cost.

3.120 Ofcom disagrees with the implications of Vodafone's view, as the competitive constraints on the two sides are fundamentally different; MNOs do not effectively compete against each other in termination charges whereas they do compete on outbound prices. This is different from many other instances of two sided markets. Ofcom acknowledges that the waterbed effect means some excess profits from termination are competed away in the more competitive retail mobile. This is discussed in paragraph 7.7 below. However, the level of competition in call origination does not impose any competitive constraint on call termination charges rather it implies MNOs may not retain excess profits they earn from setting excessive call termination charges. Furthermore, Ofcom also acknowledges that the efficient structure of prices across a MNO's activities may involve certain services being priced above cost whilst others being subsidised accordingly<sup>18</sup>. This is discussed later in Annex 16 in relation to Ofcom's estimate of the externality surcharge. However, in the absence of competitive constraints on call termination charges, MNOs are incentivised to set prices above the competitive price level (that may already be above cost), i.e. because of the fundamental difference in competitive conditions on the two sides of the market, MNOs' incentives are misaligned with incentives to set efficient prices. In Ofcom's view, its analysis already takes full account of the principles of a two sided market as manifest in the specific circumstances of MCT, and these principles do not highlight any additional competitive constraints on termination charges that have not been discussed already earlier in this Section.

<sup>18</sup> In a recent paper by Hausman and Wright, "Two Sided Markets with Substitution: Mobile Termination", June 2006 (see [http://econ-www.mit.edu/faculty/download\\_pdf.php?id=1366](http://econ-www.mit.edu/faculty/download_pdf.php?id=1366)), the authors explore the circumstances under which an unregulated termination charge may actually be lower than the welfare maximising price. They find that the level of substitution between fixed to mobile and mobile to mobile (on-net) calls is important as this may drive fixed subscribers to become mobile subscribers if termination charges are too high. Ofcom considers that this form of substitution is not significant to the extent that it can be expected to constrain mobile termination charges.

## **Operators that have both a 2G and a 3G network**

- 3.121 O2, Orange, T-Mobile and Vodafone have both 2G and 3G networks. Therefore it is necessary to consider whether or not this has any impact on market definition.
- 3.122 At present MNOs charge one price to originating operators for termination. MNOs cannot directly control which network they use to terminate calls to their subscribers on a call by call basis. This is determined by the subscriber's handset. Dual mode (2G/3G) phones cannot standby to receive calls in both modes simultaneously. Therefore they are programmed to default to the 3G mode where 3G coverage exists as, otherwise, the user would be unable to make and receive advanced 3G services. Therefore, whenever a dual mode phone is within 3G coverage any incoming voice call must be terminated on the MNO's 3G network. All calls to 2G-only phones and all calls to dual mode phones which are outside the 3G coverage area are terminated using the MNO's 2G network. It is possible that MNOs may develop the technology that will provide them with discretion in deciding on which network to terminate a call and therefore may introduce different charges for originating operators for termination supplied using a 2G or 3G network. However Ofcom has no compelling evidence that this is likely to happen in the next four years.

### **Demand-side substitution**

- 3.123 Subscribers to the 3G services of these operators are given a dual mode handset that works on both 2G and 3G networks and will receive voice calls on both networks. However, as noted above, the network on which the call is terminated is dictated by the terminating operator, currently with reference to the availability of 3G coverage. Neither the originating operator nor the calling party is able to affect this choice, and neither is likely even to be aware of whether the 2G or the 3G network has been used for termination.
- 3.124 Since callers are unable to choose the network on which calls terminate, voice call termination on the 2G network does not appear to be a demand side substitute if charges for termination of calls to 3G subscribers were raised above the competitive level. Equally, voice call termination on the 3G network does not appear to be a demand side substitute if charges for termination of calls to 2G subscribers were raised above the competitive level.

### **Supply-side substitution**

- 3.125 The fact that the two networks are run by the same operator also indicates that termination on the 2G network will not be a supply-side substitute for termination of calls to 3G subscribers. The fact that an MNO can offer termination on its 2G network for calls to its 3G subscribers will not impose any additional constraint on the level of the charges for termination on its 3G network. An MNO will not undercut its own charges. For the same reason, termination on the 3G network is not a supply-side substitute for termination of calls to 2G subscribers.

### **Common pricing to originating operators**

- 3.126 MNOs with both a 2G and a 3G network present a single price to originating operators for purchase of voice call termination to its subscribers. MNOs use both networks to terminate calls. As discussed above, currently this is not an active decision on a call by call basis, although this may change in future. This pricing policy means that the same charge is paid for voice call termination whether it is delivered using the 2G network or the 3G network. The key issue in this context is that

originating operators pay the same price whether voice call termination is on a 2G or 3G network.

- 3.127 Ofcom notes that it might be feasible for MNOs to set different charges for each of 2G and 3G termination and to levy such charges depending on the network used for termination. Technology could be developed for such a purpose. There would, however, be some practical problems to be addressed, such as whether upgrades to billing systems would be needed and that originating operators may not know which network had been used for termination. In the absence of compelling evidence to the contrary, Ofcom considers it reasonable to assume that MNOs (absent regulation) would continue to levy the same or a blended charge for termination irrespective of whether they use their 2G or 3G network to connect the call. Ofcom, therefore, includes voice call termination on the 2G and 3G networks of the same MNO in the same market.

### **Geographic market definition**

- 3.128 MNOs charge the same price for termination to a UK mobile number (or subscriber) wherever the call is made from and wherever the called party receives the call throughout the UK. Therefore there is a common pricing constraint, implying that the geographic market is UK-wide.

### **H3G and national roaming**

- 3.129 H3G provides voice termination over its 3G network where it has coverage. Out of coverage, H3G uses termination on the 2G network of another MNO ('national roaming partner'). H3G effectively uses the supply of wholesale termination services by another MNO as an input into its own supply of termination services to originating operators. H3G does not currently charge a different price for termination which is carried purely over its 3G network or which utilises its national roaming partner's network as an intermediate step. Therefore, H3G controls the termination of all voice calls to its network. Ofcom is therefore of the view that the most appropriate market definition in this case is wholesale voice call termination provided by H3G.

### **Overall proposed conclusions on market definition**

- 3.130 On the basis of the analysis and of the evidence discussed above, Ofcom holds the view that (to summarise):
- No adequate wholesale demand or supply side substitutes for termination of calls to the subscribers of a specific MNO currently appear to exist. Current technology does not allow the termination of a call to a mobile other than on the network of the MNO to which the called party subscribes. In Ofcom's view, there is no compelling evidence to suggest that this will change during the period of the review to 2011.
  - At the retail level, there are no effective alternatives for callers that could act as a constraint on termination charges. In addition, callers continue to appear to have limited awareness of the cost of calling mobiles. It is only a relatively small proportion of mobile subscribers that are likely to show a higher sensitivity to the price of incoming calls. However the MNOs have to a large degree separated these subscribers by offering them special tariffs, thus preventing this group from putting any effective pressure on termination charges.

- Technological conditions (as discussed by respondents) and the behaviour of called and calling parties may, over time, change sufficiently to alter the analysis but Ofcom believes that there is currently no compelling evidence to suggest that that such change will occur during the period to 2011 covered by this review.
- The market is not as narrow as calls to individual subscribers or numbers of a given MNO, because it appears that when a termination charge is paid there is no discrimination between the termination charge for calls to subscribers of a given network (with the exception of ported numbers). Therefore a common pricing constraint makes it appropriate to widen the product market to include all wholesale voice call termination provided by each MNO.

3.131 As a consequence, Ofcom proposes that there are five separate markets as follows:

- Wholesale mobile voice call termination provided to other Communications Providers by O2 in the UK
- Wholesale mobile voice call termination provided to other Communications Providers by Orange in the UK
- Wholesale mobile voice call termination provided to other Communications Providers by T-Mobile in the UK
- Wholesale mobile voice call termination provided to other Communications Providers by Vodafone in the UK
- Wholesale mobile voice call termination provided to other Communications Providers by H3G in the UK.

**Question 1:** *Do you agree with Ofcom's market definitions?*

## Section 4

# Market power

4.1 This section sets out Ofcom’s proposed conclusion that each of five MNOs has significant market power (SMP) as defined in section 78 of the Act in the market for wholesale mobile voice call termination provided to other Communications Providers in the UK, which has been identified in Section 3.

### Definition of SMP

4.2 Under the EU Directives and section 78 of the Act, SMP has been defined so that it is equivalent to the competition law concept of dominance. Article 14(2) of the Framework Directive states that:

“An undertaking shall be deemed to have significant market power if, either individually or jointly with others, it enjoys a position equivalent to dominance, that is to say a position of economic strength affording it the power to behave to an appreciable extent independently of competitors, customers and ultimately consumers.”

4.3 Further, Article 14(3) of the Framework Directive states that:

“Where an undertaking has significant market power on a specific market, it may also be deemed to have significant market power on a closely related market, where the links between the two markets are such as to allow the market power held in one market to be leveraged into the other market, thereby strengthening the market power of the undertaking”.

4.4 Therefore, in the relevant market, one or more undertakings may be designated as having SMP (single or collective dominance) where any undertaking, or undertakings, enjoys a position of dominance. Also, an undertaking may be designated as having SMP where it could leverage its market power from a closely related market into the relevant market, thereby strengthening its market power in the relevant market.

4.5 In assessing SMP it is important to conduct the analysis under the assumption that no regulatory intervention currently or potentially exists in the relevant market. This is because the outcome of the SMP assessment is to test whether or not any regulatory intervention is required. In the UK, mobile voice call termination has been subject to regulation since 1999. Therefore assessing SMP in this market requires consideration of a hypothetical market where regulation (or the threat of regulation) does not exist.

### The criteria for assessing SMP

4.6 The Commission has issued Guidelines on market analysis and the assessment of SMP (the ‘Commission’s Guidelines’)<sup>19</sup>. Oftel (the previous UK NRA) produced

<sup>19</sup> “Commission Guidelines on market analysis and assessment of significant market power under the Community regulatory framework for electronic communications networks and services” (See [http://europa.eu.int/eur-lex/pri/en/oj/dat/2002/c\\_165/c\\_16520020711en00060031.pdf](http://europa.eu.int/eur-lex/pri/en/oj/dat/2002/c_165/c_16520020711en00060031.pdf) )

additional guidelines on the criteria to assess effective competition<sup>20</sup>. In assessing whether an undertaking has SMP, this review takes the utmost account of the Commission's Guidelines as Ofcom is required to do when considering whether to make a market power determination under section 79 of the Act, as well as considering the application of the Oftel equivalent guidelines.

4.7 Specifically, the Commission's Guidelines state that:

"NRAs will assess whether the competition is effective. A finding that effective competition exists on a relevant market is equivalent to a finding that no operator enjoys a single or joint dominant position on that market." [Paragraph 19]

4.8 The Commission's Guidelines go on to state that:

"NRAs will conduct a forward looking structural evaluation of the relevant market, based on existing market conditions. NRAs should determine whether the market is prospectively competitive, and thus whether any lack of effective competition is durable, by taking into account expected or foreseeable market developments over the course of a reasonable period. The actual period used should reflect the specific characteristics of the market and the expected timing for the next review of the relevant market by the NRA. NRAs should take past data into account in their analysis when such data are relevant to the developments in that market in the foreseeable future." [Paragraph 20]

4.9 Given the market definitions set out in Section 3, SMP cannot be held by more than one MNO in each market. Therefore this SMP assessment focuses on single firm dominance.

4.10 In the Commission's Guidelines, the Commission discusses market shares as being an indicator of market power

"...Market shares are often used as a proxy for market power. Although a high market share alone is not sufficient to establish the possession of significant market power (dominance), it is unlikely that a firm without a significant share of the relevant market would be in a dominant position. Thus, undertakings with market shares of no more than 25 % are not likely to enjoy a (single) dominant position on the market concerned. In the Commission's decision making practice, single dominance concerns normally arise in the case of undertakings with market shares of over 40 %, although the Commission may in some cases have concerns about dominance even with lower market shares, as dominance may occur without the existence of a large market share. According to established case-law, very large market shares — in excess of 50 % — are in themselves, save in exceptional circumstances, evidence of the existence of a dominant position..." [Paragraph 75]

4.11 However, the Commission notes further that

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<sup>20</sup> Oftel's market review guidelines; criteria for the assessment of significant market power published August 2002

“It is important to stress that the existence of a dominant position cannot be established on the sole basis of large market shares. As mentioned above, the existence of high market shares simply means that the operator concerned might be in a dominant position.

Therefore, NRAs should undertake a thorough and overall analysis of the economic characteristics of the relevant market before coming to a conclusion as to the existence of significant market power. In that regard, the following criteria can also be used to measure the power of an undertaking to behave to an appreciable extent independently of its competitors, customers and consumers. These criteria include amongst others:

- overall size of the undertaking,
- control of infrastructure not easily duplicated,
- technological advantages or superiority,
- absence of or low countervailing buying power,
- easy or privileged access to capital markets/financial resources,
- product/services diversification (e.g. bundled products or services),
- economies of scale,
- economies of scope,
- vertical integration,
- a highly developed distribution and sales network,
- absence of potential competition,
- barriers to expansion.

A dominant position can derive from a combination of the above criteria, which taken separately may not necessarily be determinative. “[Paragraphs 78-79]

4.12 The European Regulators’ Group (“ERG”) has issued a working paper on SMP<sup>21</sup> that builds upon the Commission’s Guidelines. In this paper further criteria are explicitly considered:

- Excessive pricing;
- Ease of market entry;
- Cost and barriers to switching;
- Evidence of previous anti competitive behaviour;

<sup>21</sup> “Revised ERG Working paper on the SMP concept for the new regulatory framework”, October 2004 (See [http://www.erg.eu.int/doc/publications/public\\_hearing\\_concept\\_smp/erg0309rev1\\_smp\\_working\\_doc.pdf](http://www.erg.eu.int/doc/publications/public_hearing_concept_smp/erg0309rev1_smp_working_doc.pdf) )

- Active competition on other parameters;
- Existence of standards/conventions;
- Customers' ability to access and use information;
- Price trends and pricing behaviour; and
- International benchmarking.

4.13 This section of the consultation document considers the relevance of all these criteria in the assessment of SMP in the context of this market review.

### **Assessment of SMP against relevant criteria**

4.14 This assessment first discusses the following relevant criteria for this market review, namely:

- Market shares;
- Absence of potential competition; the ease of market entry and the related criteria concerning the control of infrastructure not easily duplicated, and
- Absence of countervailing buying power and the related criteria concerning the overall and costs and barriers to switching.

4.15 There then follows a discussion of why the other criteria (including evidence of excessive pricing) listed in the Commission's and the ERG's guidance may be considered less relevant or material to the assessment of SMP in the relevant markets.

4.16 The criteria are set against a forward looking analysis of the markets starting from 1 April 2007 (when the current charge controls on 2G termination by 2G/3G MNOs expire) looking forward over the period to 2011. As discussed in Section 3, Ofcom considers that there are no compelling factors which would indicate that the market definition will change during the period to 2011.

### **Market shares**

4.17 All five MNOs have had (since launch of their voice services) a 100% share of terminating voice calls on their own respective networks, both when measured by volume of calls and by revenues. This applies to calls terminated over each operator's 2G and 3G network. This means that each MNO is, in effect, currently a monopolist in the supply of termination for voice calls to its customers. As discussed in Section 3, MNOs do not control the charge for all the calls they terminate due to the current number portability arrangements. Nevertheless it is Ofcom's view that porting has no impact on SMP in these markets as these arrangements do not constrain MNOs' ability to set MCT charges in respect of non ported numbers.

4.18 There has been no change in these 100% market shares and these market shares will not change during the period to 2011 (given the market definition). The probability of competitive entry in the relevant markets is very low, for the reasons explained in paragraph 4.22 below in relation to ease of market entry.

- 4.19 H3G currently relies on O2's 2G network to terminate calls to its subscribers where its own 3G network does not offer coverage for a particular subscriber, and has announced that it has also awarded a contract to Orange for the provision of similar facilities. Calling parties and originating operators have no choice but to use H3G to terminate those calls (even if H3G uses O2 or potentially another MNO's network). Therefore, H3G has 100% of the market for voice termination to its subscribers. Whether or not H3G ultimately rolls out its own 3G network to offer its subscribers sufficient service coverage and therefore no longer requires the use of another MNO's 2G network does not affect the proposed conclusions of this analysis of SMP.
- 4.20 In Ofcom's view, these 100% market shares would imply, absent investigation of other factors, that each MNO has prima facie SMP in the market for termination of voice calls on its network(s).

#### **Absence of potential competition, ease of market entry and control of infrastructure not easily duplicated**

- 4.21 The threat of potential entry can prevent firms from raising prices above competitive levels and, for example, could lead a firm with a 100% market share to behave in a way that would be consistent with higher levels of competition existing in the market than its market share might suggest. However, this threat becomes weak when there are barriers to entry.
- 4.22 In this market, the infrastructure required to enable other providers to offer termination on a specific network apart from the provider of that network is not available. Nevertheless, in the Preliminary Consultation and the March 2006 Consultation Ofcom noted that at any time each mobile phone is generally within the coverage area of 4 or 5 different mobile networks. In theory, it might be technically possible for originating operators to choose which network terminates its calls, but this would be likely to require substantial technical changes and co-operation. As noted in paragraph 8.10 below, responses to the March 2006 Consultation all agreed that such competitive termination is unlikely to be practicable or cost efficient in the foreseeable future. For the reasons set out in 8.10, it is Ofcom's view that mandated technical change to enable competitive termination is neither currently feasible nor likely, in the medium term, to pass a cost-benefit analysis. Market led change of this kind is also highly unlikely to arise for the same reasons, and also because change would be reliant on the co-operation of the MNOs which currently enjoy 100% market shares.
- 4.23 Therefore actual competitive entry, or the threat thereof, does not provide competitive pressure on the MNOs. Moreover, as noted in paragraphs 3.104 and 3.105 above, even if a new mobile network operator were to start supplying mobile services, this would not undermine the SMP of existing MNOs due to the lack of competition between MNOs in supplying wholesale mobile termination on their respective networks.
- 4.24 In Ofcom's view, the absence of potential competition and the absolute barriers to entry reinforce the prima facie indicators, in respect of 100% market shares, that each MNO may have SMP in the market for termination of voice calls on its network(s).

## Countervailing buyer power, cost and barriers to switching

- 4.25 Countervailing buyer power (CBP) exists when a particular purchaser (or group of purchasers) of a good or service is sufficiently important to its supplier to influence the price charged for that good or service.
- 4.26 CBP is not an absolute concept but, rather, refers to the relative strength of the buyer in its negotiations with the prospective seller for the good or service in question. In considering whether an undertaking has SMP, it is not sufficient just for the buyer to have some CBP but, rather, it is necessary that the buyer can exert sufficient CBP such that the seller is unable to act independently of competitors, customers and consumers, resulting in prices that are not excessive (constrained to a level consistent with a competitive outcome). The seller can then be described as facing sufficient CBP.
- 4.27 Given the prima facie evidence of SMP deriving from 100% market shares, the absence of potential competition and the absolute barriers to entry, Ofcom considers that the analysis of CBP may be of central importance in assessing whether some or all of the MNOs have SMP in the market for termination of voice call that they supply to other operators. This analysis is presented in detail in Section 5. In summary Ofcom does not find that MNOs face sufficient CBP to offset their prima facie position of holding SMP.

## Other criteria for assessing SMP

- 4.28 The following paragraphs (which include quotations taken from the *Revised ERG Working paper on the SMP concept for the new regulatory framework*) consider the remaining criteria listed earlier, explaining why Ofcom considers these less relevant to this assessment of SMP in the relevant markets.
- 4.29 Excessive pricing – “the ability to price at a level that keeps profits persistently and significantly above the competitive level is an important indicator for market power.” Evidence of excessive pricing can support a finding of SMP. It is not, however, a prerequisite to a finding of SMP. In the last market review Ofcom noted that 2G termination charges appeared to have been substantially above a reasonable estimate of each MNO’s costs for a number of years (despite formal and informal regulation)<sup>22</sup>. In the case of 3G mobile termination, the cost modelling, as set out in Section 9 below, indicates that the 3G charges presently levied by H3G, and the implicit 3G charges of the 2G/3G MNOs are significantly above Ofcom’s proposed view of the appropriate charges for MCT that is subject to consultation. Ofcom will reconsider the relevance of this criterion in light of responses to the consultation.
- 4.30 Overall size of the undertaking – “the potential advantages, and the sustainability of those advantages, that may arise from the large size of an undertaking relative to its competitors”. As discussed at paragraph 4.17 there is only one supplier of MCT in each of the markets defined in Section 3. Therefore the size of these suppliers relative to its competitors in each market is not a relevant factor.
- 4.31 Technological advantages or superiority – “Such advantages may represent a barrier to entry as well as an advantage over existing competitors due to lower production

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<sup>22</sup> See paragraphs 3.17 – 3.31 of Ofcom’s *Proposals for the identification and analysis of markets, determination of market power and setting of SMP conditions*, December 2003 (“the December 2003 Consultation”), [http://www.ofcom.org.uk/consult/condocs/mobile\\_call\\_termination/mct\\_consultation/](http://www.ofcom.org.uk/consult/condocs/mobile_call_termination/mct_consultation/)

costs or product differentiation”. This criterion is not considered relevant in this market because the presence of absolute barriers to entry indicates that each MNO offering voice termination faces no existing or potential competitors. Hence, no comparison between technologies is relevant.

- 4.32 Easy or privileged access to capital markets/financial resources – “Easy or privileged access to capital markets may represent a barrier to entry as well as an advantage over existing competitors.” This criterion is not considered relevant in this market, because the presence of absolute barriers to entry indicates that each MNO offering voice termination faces no existing or potential competitors. Therefore, the cost of capital an MNO faces cannot give it any special advantage in this market.
- 4.33 Product/services diversification (e.g. bundled products or services) – “Generally speaking there is a positive relation between product/services diversification and market power, which is due to the fact that increased differentiation in general will also hamper switching between suppliers if these are able to differentiate their products from their competitors and if others are not able to imitate the differentiation.” This criterion is not considered relevant because each MNO sells termination to originating operators who request it on a stand-alone basis and it is not bundled with other services. In any case, the limited extent that callers to mobile subscribers have been found to exercise demand-side substitution confirms that calls to mobiles are a much differentiated service from other forms of communication. Moreover, the actual buyers of voice call termination, namely other operators, have no demand-side alternatives.
- 4.34 Economies of scale – “Economies of scale arise when increasing production causes average costs (per unit of output) to fall... If this is the case, economies of scale can act as a barrier to entry as well as an advantage over existing competitors”. This criterion is not considered relevant in this market because the presence of absolute barriers to entry indicates that each MNO offering voice termination faces no existing or potential competitors and, therefore, cost-advantages are not relevant in the markets defined in Section 3.
- 4.35 Economies of scope – “Economies of scope exist where average costs for one product are lower as a result of it being produced jointly with other products by the same firm. ...If the existence of economies of scope requires entrants to enter in more than one market simultaneously, this may require additional expertise, more capital etc, which may sum up to higher costs, thus hampering ease of market entry.” This criterion is not considered relevant because the presence of absolute barriers to entry indicates that each MNO offering voice termination faces no existing or potential competitors.
- 4.36 Vertical integration – “Vertical integration while normally efficient can strengthen dominance by making new market entry harder due to control of upstream or downstream markets. As such, vertical integration may give an advantage to the integrated firm (over its competitors), as access to sales and supply markets might be more easily attainable for the integrated firm. Vertical integration makes it also possible to lever market power into upstream or downstream markets.” The MNOs are vertically integrated in the sense that they own both the upstream infrastructure that enables the provision of wholesale termination and other wholesale access and origination services whilst at the same time they are also downstream suppliers of retail services. However, the relevant question in this context is whether the position of any MNO in the retail market allows it to leverage market power into wholesale mobile call termination. This is not the case for two reasons. First, no MNO has been determined as having SMP in the downstream retail market. (See Oftel's

consideration of the retail market for mobile outbound services, which formed part of its *Review of wholesale mobile access and call origination* - October 2003)<sup>23</sup>.

Second, for the reasons set out above, one MNO is not in competition with another MNO with respect to mobile voice termination to their customers.

- 4.37 A highly developed distribution and sales network – “Well-developed distribution systems are costly to replicate and maintain, and may even be incapable of duplication. They may represent a barrier to entry as well as an advantage over existing competitors”. Ofcom does not consider this criterion relevant because the service in question is acquired only by purchasers at the wholesale level (other MNOs and fixed operators) and does not require a specialised or complex distribution network.
- 4.38 Barriers to expansion – “There may be more active competition where there are lower barriers to growth and expansion.” This criterion is not considered relevant, because the presence of absolute barriers to entry implies that competition in the market for MCT is not likely to extend beyond the MNO in question and thus the existence of barriers to expansion becomes irrelevant
- 4.39 Evidence of previous anti-competitive behaviour – “Effectively competitive markets lack collusion among suppliers and anti-competitive behaviour.” Evidence of previous anti-competitive behaviour such as predatory pricing and other market foreclosure behaviour can be an indication that a market is not effectively competitive. Ofcom is not aware of relevant evidence of anti competitive behaviour in these markets.
- 4.40 Active competition on other parameters – The ERG proposes that market power can be obtained by successfully differentiating products, either vertically (on the basis of quality) or horizontally (on the basis of diversity). This criterion is not considered relevant in this market because mobile voice call termination does not seem to offer much scope for vertical or horizontal product differentiation. In addition, the presence of absolute barriers to entry implies that competition in the market is not likely to extend beyond the existing players and, thus, diversification, even if possible, is not relevant for the period covered by this review.
- 4.41 Existence of standards/conventions – “Useful background information not only for market delineation but also for the assessment of product homogeneity/heterogeneity, the existence of market barriers for potential entrants and for the assessment of dominance can be obtained by considering the existence and consequences of standards and conventions. The extent of technical standardization may determine the potential for product differentiation as well as the ease of market entry (availability of a certain technology; compatibility with other firms’ products/technologies). Conventions like the calling-party pays principle or standard international roaming agreements have to be taken into account in order to be able to correctly interpret the other indicators mentioned in this document and/or to understand the source of market failure and competition problems.” As discussed in Section 3, the CPP arrangement plays an important role in conditioning mobile subscribers’ preferences and behaviour. It is a central component of the analysis leading to Ofcom’s proposed conclusion on market definition and market power.
- 4.42 Customers’ ability to access and use information – The ERG proposes that limited access to information on terms and conditions (especially prices), or access to

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<sup>23</sup> It is possible to consider the impact of excessive high wholesale termination charges levied by all MNOs on a new entrant to the mobile retail market. The new entrant would face relatively higher costs given the size of their network and the resulting disproportionate number of off-net calls.

information that is difficult to use, may reduce the capacity of consumers to act upon differences between providers. As a result firms acquire independence of action from consumers and competition. This criterion does not refer to the ability of consumers to switch between providers, but to the capacity of first time buyers to make an informed choice. Wholesale customers appear to have all the relevant information to make an informed choice. However, they have no choice between providers, since each MNO is a monopolist in the provision of voice termination to its subscribers.

- 4.43 Since termination charges are an input to the retail price for calling mobile phones, the behaviour of retail consumers may have an impact on the MNOs' ability to set high termination charges. The information available to retail customers must, therefore, be considered. Better knowledge on their part about the price of calling each specific network may indirectly force MNOs to compete on the level of termination charges. The extent to which callers can apply pressure indirectly on mobile termination charges was discussed in detail in Section 3. A number of links (not just better awareness of the cost of calling mobiles) would have to be satisfied so that the behaviour of callers to mobiles could constrain termination charges. For this reason, Ofcom considers that the extent to which consumers can access information on the cost of incoming calls and how easy this is to understand and use, considered as part of the market definition exercise in Section 3, does not play a part separately in the assessment of market power. With regard to the called parties, there is evidence that, as a consequence of the pricing arrangements, they are not sufficiently concerned about the cost of incoming calls when choosing their network.
- 4.44 Price trends and pricing behaviour – “Pricing patterns substantially determine the welfare of customers, and thereby overall welfare. The degree of competition in a relevant market (and its dynamic) might be observed through time series of price movements (possibly linked to international benchmarks), the reactions on price setting of single providers and prevailing differences in prices over time (for homogenous products). If for example competitors cut their prices whereas a particular undertaking (or group of undertakings) leaves its prices unchanged, economic theory would conclude that this should lead to a loss in sales to this (group of) undertaking(s). If therefore a (group of) undertaking(s) can sustain its (their) prices permanently at a higher level, this can be seen as an indication that this (group of) undertaking(s) is free to behave independently from its rivals. Further insights can be gained by an extension of the observation period, which may reveal whether a certain undertaking (group of undertakings) is forced to react to its competitors' price cuts with a lag. The shorter the lag and the sharper the price response in reaction to price cuts of rivals, the fiercer competition can be assumed to be. Pricing patterns might therefore provide important additional information on the effectiveness of competition and might be taken into account as pricing is central to economic conduct”. Given the analysis of markets in section 3 above, prices are not subject to effective competition. Therefore it is not possible to observe any competitor response to the changes in price of its rivals and make inferences about the level of competition. Furthermore, charge controls have acted as the binding constraint on MNOs' pricing. In the case of H3G, its MCT charges have been constant since first set. (As is noted in paragraph 9.88 below, according to Ofcom's analysis of costs that is subject to consultation these charges are above cost.) The impact of other external competitive pressures has not imposed pressure on MNOs to reduce their prices below the charge controls.
- 4.45 International benchmarking – The ERG proposes that, for many of the criteria listed above, additional valuable information can be obtained by investigating benchmarks from comparable economies. International benchmarking can be a useful indication of the level of competitive prices and therefore allow inference of excessive pricing.

Across the EU mobile termination is subject to regulation and specific price controls. This affects the interpretation of benchmark charges from outside the UK. According to data collated by ERG, those termination charges in the UK which are subject to price control regulation are lower than termination charges in some other EU countries. However, since termination charges in the UK are subject to a price control on a LRIC basis whereas in other EU countries different regulation and cost benchmarks apply, such a comparison should be treated with caution. Therefore, Ofcom is not relying on such benchmarks.

- 4.46 In this case international benchmarks for termination charges are also difficult to rely upon without significant understanding of key country differences in costs related to for example, geography, topology and underlying equipment and labour costs.

### Proposed conclusions on SMP

- 4.47 The definition of the relevant market has led Ofcom to reach a proposed conclusion that there is a separate market for termination on each MNO's network(s) and that this will be maintained for the period to 2011.
- 4.48 As explained above, this means that each MNO is, in effect, a monopolist in the supply of termination to its own networks. Ofcom proposes that each MNO has SMP in the market for terminating calls over its own network. This is because:
- It is only the terminating MNO that can terminate calls to its subscribers, and each MNO therefore has 100% market share in the market for wholesale termination that it supplies to other operators;
  - Ofcom does not foresee any changes to the current CPP arrangements nor the introduction of new or developing technologies that will allow another provider to offer termination on another mobile network, other than the MNO providing that network;
  - This combination of current and enduring high market share and absolute barriers to entry provides a strong presumption of market power.
  - Ofcom does not believe that fixed and mobile originating operators are able to exercise sufficient CBP to overcome the terminating MNO's position (i.e. to prevent terminating MNOs charging excessively for MCT). This matter is addressed in more detail in Section 5 below.

**Question 2:** *Do you agree that each of the five MNOs has SMP in the market for wholesale mobile voice call termination provided by it to other Communications Providers in the UK?*

## Section 5

# Assessment of countervailing buyer power

- 5.1 Given the prima facie evidence of SMP set out in Section 4, the question of whether each MNO providing MCT has SMP depends on the extent to which its position of SMP may be off-set by the buyer power of purchasers of MCT.
- 5.2 Buyer power is not an absolute concept but, rather, refers to the relative strength of the buyer in its negotiations with the prospective seller for the good or service in question. CBP exists when a particular purchaser (or group of purchasers) of a good or service is sufficiently important to its supplier to influence the price charged for that good or service. The Commission notes in its Explanatory Memorandum ('EC Memorandum') to its Recommendation on Market Definition that:
- “A market definition for call termination on each mobile network would imply that currently each mobile network operator is a single supplier on each market. However, whether every operator then has market power still depends on whether there is any countervailing buyer power, which would render any non-transitory price increase un-profitable.”<sup>24</sup>
- 5.3 Ofcom considers that in this context, the test to assess whether CBP is sufficient to rebut a presumption of SMP is an analysis of whether CBP could constrain MNOs' MCT charges to the competitive level. Any charge above that level would imply that CBP is not sufficient and would therefore imply that MNOs have SMP.
- 5.4 This section sets out Ofcom's assessment of the extent to which a terminating MNO may face CBP from the different potential buyers of wholesale mobile termination. This section sets out:
- The criteria that Ofcom considers is relevant in assessing the existence and extent of CBP;
  - The relevant regulatory factors that Ofcom considers should appropriately be taken into account in assessing CBP;
  - A description of different purchasers of termination and key issues to be taken into account; and
  - Assessment of CBP in relation to purchasers and sellers in the relevant markets.

## Criteria for assessing countervailing buyer power

- 5.5 The European regulatory framework for communications services, together with European and UK competition law, recognise CBP as a relevant factor in assessing

<sup>24</sup> Page 34, Explanatory Memorandum to the Commission Recommendation on Relevant Product and Service Markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communication networks and services. (See [http://europa.eu.int/information\\_society/policy/ecomms/doc/info\\_centre/recomm\\_guidelines/relevant\\_markets/en1\\_2003\\_497.pdf](http://europa.eu.int/information_society/policy/ecomms/doc/info_centre/recomm_guidelines/relevant_markets/en1_2003_497.pdf) )

the degree of market power an undertaking may enjoy, and in particular whether that undertaking has SMP or may be dominant in the relevant market.

- 5.6 In the EC Memorandum the Commission sets out that even a 100% market share in itself does not automatically imply that the undertaking in question has SMP. This is because an undertaking's ability to behave independently of customers, competitors and consumers depends, among other things, on the ability of its customers to influence its pricing decisions. In this respect the EC Memorandum notes that a market definition of call termination on individual networks:

“...does not automatically mean that every network operator has significant market power; this depends on the degree of any countervailing buyer power and other factors potentially limiting that market power.”<sup>25</sup>

- 5.7 The OFT has also set out relevant guidance,<sup>26</sup> which states that the strength of buyers and the structure of the buyers' side of the market may constrain the market power of a seller. The OFT Guidance notes that the relevant consideration in assessing the impact of buyer power on the ability of the seller to set a price is whether a buyer would have choice, or, in other words, the benefit of an 'outside option'.

- 5.8 The OFT Guidance notes that the analysis of buyer power requires an understanding of the way that buyers interact with suppliers. Buyer power can be thought of as the degree of bargaining strength in negotiations. Analysis of buyer power normally becomes relevant only where there are a few relatively important buyers in terms of share of supply as opposed to a large number of buyers who are price takers. The OFT sets out a number of conditions which might imply that an undertaking's bargaining power could be enhanced:

“the buyer is well informed about alternative sources of supply and could readily, and at little cost to itself, switch substantial purchases from one supplier to another while continuing to meet its needs;

the buyer could commence production of the item itself or 'sponsor' new entry by another supplier (e.g. through a long-term contract) relatively quickly and without incurring substantial sunk costs;

the buyer is an important outlet for the seller (i.e. the seller would be willing to cede better terms to the buyer in order to retain the opportunity to sell to that buyer);

the buyer can intensify competition among suppliers through establishing a procurement auction or purchasing through a competitive tender (see Part 4)...”<sup>27</sup>

- 5.9 A further criterion is considered by the ERG, namely factors determining whether the buyer is price sensitive.<sup>28</sup>

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<sup>25</sup> Ibid. page 20

<sup>26</sup> Assessment of market power, understanding competition law, OFT, 2004.

(See <http://www.of.gov.uk/NR/rdonlyres/A92F91BC-B556-4724-8D2B-7002F6CDEA65/0/oft415.pdf> )

<sup>27</sup> Ibid. page 24

<sup>28</sup> “Revised ERG Working paper on the SMP concept for the new regulatory framework”, October 2004, (See

“The higher the portion of the costs for a service in relation to their total expenditure and the better informed, the more sensitive consumers are as to the price and quality of the service and the more ready they might be to switch suppliers or to reduce demand.”<sup>29</sup>

- 5.10 Finally, in the context of wholesale mobile voice call termination, there is a further relevant factor, namely whether or not reciprocity exists in negotiations between parties. Telephone networks generally negotiate termination charges with each other on a bilateral basis. This is because customers on one network would look unfavourably on a situation where they were able to make calls to customers on another network, but were unable to receive calls from them.
- 5.11 This section continues with a discussion of the regulatory factors that are relevant to Ofcom’s analysis of CBP, sets out a description of the different buyers of MCT and sets out Ofcom’s assessment of purchasers’ CBP based on the following criteria below as discussed in paragraphs 5.5 – 5.10 above:
- The purchaser as an important outlet for the seller;
  - The purchaser as a well-informed and price sensitive buyer;
  - Reciprocity of trade between the purchaser and seller;
  - Lack of alternative sources of supply; and
  - Option not to purchase and option to delay.

### The regulatory factors

- 5.12 If a communications provider is found to have SMP in the relevant market it may be considered appropriate to impose regulatory obligations. Therefore in assessing SMP and in particular CBP in this market review it is necessary to conduct the analysis on the basis that no regulatory intervention currently or potentially exists on the firm in the market to which the market analysis is related. However, any assessment of the likely behaviour of suppliers and purchasers in the course of negotiations must take account of other regulatory factors to which they are subject even in the absence of an SMP finding.
- 5.13 Specifically the European Commission noted in its veto of a notified draft measure by the German Regulator, RegTP, requiring it to withdraw its notification on the fixed call termination market that 53 Communications Providers, apart from Deutsche Telekom AG (DTAG), did not have SMP:

“On the basis of competition rules, applicable under Article 14 and 16 of the Framework Directive, in particular Article 82 of the EC Treaty, an analysis of dominance (i.e. SMP) requires taking into account the concrete economic circumstances including legislative and administrative acts. In economic terms, it is not appropriate to exclude regulatory obligations that exist independently of a SMP finding on the market under consideration but that can have an

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[http://www.erg.eu.int/doc/publications/public\\_hearing\\_concept\\_smp/erg0309rev1\\_smp\\_working\\_doc.pdf](http://www.erg.eu.int/doc/publications/public_hearing_concept_smp/erg0309rev1_smp_working_doc.pdf)

<sup>29</sup> Ibid. paragraph 11

impact on the SMP finding on the markets under consideration. From a methodological viewpoint obligations flowing from existing regulation, other than the specific regulation imposed on the basis of SMP status in the analysed market, must be taken into consideration when assessing the ability of an undertaking to behave independently of its competitors and customers on that market. In the Commission's view, this could only be otherwise where it is uncertain whether the regulation concerned will continue to exist throughout the period of the forward looking assessment."<sup>30</sup>

- 5.14 Moreover, in the CAT's judgment in November 2005, in respect of Ofcom's determination of June 2004 that H3G had SMP, a key issue clarified was that regulation on the operator supplying termination should not be taken into account when undertaking an analysis of SMP, however, regulation affecting the purchaser of termination should be duly considered. In relation to the negotiations between H3G and BT over MCT, the CAT observed that:

"...regulation is brought into account in determining CBP, whereas the regulation of H3G is left out of account in looking at its side of the SMP assessment. There is nothing inconsistent in this approach. We have identified the illogicality in allowing a presumption of regulation to a putatively regulated body to operate to determine whether SMP exists. This does not apply to a consideration of CBP where one has to consider the question of a counter party. In assessing the position of that counterparty it would be illogical not to look at the effect of regulation (and no one has suggested we should not), so OFCOM were quite correct in doing so in this case."<sup>31</sup>

- 5.15 Indeed, as regards the relevance of the possibility of regulation on H3G's conduct, the CAT's judgment observed that:

"the possibility of regulation being brought to bear on H3G is a factor that cannot be prayed in aid by H3G as militating against its having SMP. We reiterate that H3G's submissions would give rise to an illogical and unattractive, if not unprincipled, position, and we consider them to be wrong. The correct position is as found in the RegTP decision, namely that regulatory obligations on a market counterparty can be taken into account, but not the potential for regulation on the party whose market position is under consideration."<sup>32</sup>

- 5.16 Ofcom considers that there are two regulatory obligations that are relevant in this context since they exist independently of an SMP finding on providers of MCT:
- Ofcom's dispute resolution powers - in the event that terms and conditions in relation to MCT cannot be agreed by negotiation between any particular purchaser or supplier, a dispute can be referred to Ofcom to resolve; and
  - The obligation on BT to offer end-to-end connectivity - BT must provide end-to-end connectivity and must, therefore, purchase MCT (but not on whatever terms

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<sup>30</sup> Commission Decision of 17 May 2005, Case DE/2005/0144, C(2005) 1442 final, paragraph 22.

<sup>31</sup> CAT judgment, paragraph 142.

<sup>32</sup> CAT judgement, paragraph 99.

a supplier specifies). In the event that terms and conditions cannot be agreed by negotiation, a dispute can be referred to Ofcom to resolve.

- 5.17 These two regulatory factors are introduced below. Their relevance to this analysis of CBP is discussed in detail in paragraphs 5.89-5.104 under “Option not to purchase (or to delay)”.
- 5.18 As set out above at paragraphs 5.14 and 5.15, the CAT has observed that: (a) the possibility of regulation being brought to bear on an undertaking can not be prayed in aid of an undertaking as mitigating against its having SMP; and (b) the effect of regulation on a counter party should be looked at.
- 5.19 In response to this Ofcom considers that, in examining whether or not its dispute resolution powers result in an operator having CBP, it is not appropriate to consider the effect of such resolution on the undertakings on which the SMP analysis is being carried out. In other words, an undertaking can not be found not to have SMP simply because of the fact that a regulator may exercise its dispute resolution powers. To do so would, in the words of the CAT, be “illogical”.
- 5.20 However, in the alternative Ofcom sets out how it would resolve disputes below. Ofcom also notes as regards point (b) in paragraph 5.18 above, that it has looked at the effect of an end-to-end connectivity obligation in paragraphs 5.26 to 5.28 below.

### **Ofcom’s dispute resolution powers**

- 5.21 On 6 July 2006 Ofcom published a consultation entitled Draft Enforcement Guidelines and is currently consulting on these guidelines until 14 September 2006.<sup>33</sup> These guidelines set out Ofcom’s approach to handling complaints and disputes, and the procedures Ofcom uses in conducting investigations and resolving disputes.
- 5.22 In general, Ofcom’s dispute resolution powers and duties, set out in sections 185 to 191 of the Act, would ultimately require it to resolve a dispute.
- 5.23 In the context of this analysis of CBP Ofcom considers that it is important to distinguish between a potential dispute referred to Ofcom that involves one or more parties that have SMP and disputes where no party has SMP.
- 5.24 This distinction is important because the different circumstances of a dispute are important since it is Ofcom’s view that its approach to the resolution of an interconnection dispute is likely to be different in cases where the parties do not have SMP, as compared to its likely intervention in cases where one of the parties is considered to have SMP.
- 5.25 However, in either case Ofcom notes that it has the power to determine the price of an interconnection service in a dispute whether or not either or both parties has SMP in the relevant market in which the dispute takes place. In its judgment of 29 November 2005, the CAT noted that:

“nothing in the wording of the Act suggests that SMP had to be found before the regulator decided a dispute over price”.<sup>34</sup>

<sup>33</sup> See <http://www.ofcom.org.uk/consult/condocs/enforcement/enforcement.pdf>

<sup>34</sup> CAT judgment, paragraph 130.

## The end-to-end connectivity obligation

- 5.26 End-to-end connectivity describes the ability of consumers to make calls to other customers or services on the same network or other providers' networks. This is a key feature that customers expect; they want to be able to call everyone with a telephone and not just a subset of that group.
- 5.27 BT is obliged to provide end-to-end connectivity in the form of an access related condition<sup>35</sup>. The condition requires BT:
- To purchase wholesale narrowband (fixed and mobile voice and narrowband data) call termination services from any provider of public electronic communications networks ('PECN') that reasonably requests in writing that BT purchases such services;
  - To ensure that the purchase of the wholesale narrowband (fixed and mobile voice and narrowband data) call termination 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;
  - To ensure that after purchasing wholesale narrowband (fixed and mobile voice and narrowband data) call termination services, BT will not be able to unreasonably change, withdraw or restrict access to an applicable Normal Telephone Number; and
  - To comply with any direction Ofcom may make from time to time under this Condition.
- 5.28 In this statement Ofcom also notes that it does not consider that it is proportionate to impose a similar obligation on other providers of Public Electronic Communications Services. However, Ofcom considers that all providers should provide end-to-end connectivity and therefore if Ofcom became aware that this was not be provided Ofcom would consider whether such an obligation were appropriate and proportionate in that case:

“...if end-to-end connectivity is not ensured by an access-related condition on BT, then Ofcom will consider using its powers to impose such an obligation on all PECNs.”<sup>36</sup>

## BT's position as provider of transit services

- 5.29 MNOs are not able to identify in all cases, on a call by call basis, from which operator a call originates. This is because BT transits a significant amount of traffic to MNOs on behalf of a number of different originating operators. Cable and Wireless also transits a limited amount of traffic to MNOs. Ofcom estimates (based on confidential information from MNOs and FNOs collected during the consultation) that of all calls to mobiles, about 43% is transited by BT and Cable and Wireless on behalf of other originating operators (34% on behalf of other FNOs and 66% on behalf of MNOs originating calls to other MNOs). BT carries [34%] and Cable and Wireless [34%] of this transited traffic. The remaining 57% of calls to mobiles is directly conveyed to

<sup>35</sup> See Ofcom Statement “End-to-end connectivity” published on 13 September 2006.

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

<sup>36</sup> See paragraph 3.25 “End-to-end connectivity” Statement 13 September 2006

MNOs, 29% by FNOs (of which BT accounts for [x%] and Cable and Wireless [x%]) and 28% by MNOs. Calls transited by BT (and Cable and Wireless) appear to a MNO as if they had been originated by BT (or Cable and Wireless) when in fact it they may have originated from a wide variety of different operators. Therefore MNOs are not able to price discriminate between different originating operators. The figure below sets out the share of total MCT minutes purchased by BT and other purchasers, after transit arrangements have been taken into account. The figure therefore sets out the shares of the ultimate purchasers of MCT.

**Figure 5.1 Share of total MCT minutes purchased by different operators**

<b>Purchasing operator</b>	<b>Share of total MCT minutes purchased (including minutes purchased to offer transit and termination to others)</b>
BT	[x%]
Cable and Wireless	[x%]
Other FNOs	[x%]
MNOs	[x%]
<i>Orange</i>	[x %]
<i>Vodafone</i>	[x %]
<i>T-Mobile</i>	[x %]
<i>O2</i>	[x %]
<i>H3G</i>	[x %]

Source: Information from operators and Ofcom analysis

- 5.30 The figure above shows that BT is the largest purchaser of MCT with other purchasers accounting for significantly lower shares. In offering transit services BT provides other originating operators with the options to either:
- directly interconnect with a terminating MNO and negotiate an interconnection charge directly, or
  - indirectly interconnect, transiting its traffic via BT and effectively allowing BT to negotiate on its behalf alongside all other originating operators who transit traffic via BT.
- 5.31 This provides originating MNOs with a commercial trade-off, between the two options. The option that is best depends on the termination charge BT agrees with the terminating MNO and BT's charge for transit, compared to the termination charge the originating operator agrees with the terminating MNO and the costs associated with establishing direct interconnection.
- 5.32 The MCT charge that BT agrees to with each MNO (plus transit charge) therefore acts as a ceiling to the MCT charge that other originating operators would be willing to accept from a terminating MNO. If a MNO sought to charge an originating operator a higher charge than the charge BT has secured with that MNO the originating MNO

would have the option to transit its traffic via BT rather than directly interconnect. In practice there is no compelling evidence of originating operators seeking to transit traffic via BT for this reason. However, this may be because MNOs have always charged the same MCT charge to all originating operators.

- 5.33 Moreover, the MCT charge that BT agrees with each MNO may also act as a floor on the MCT charge that the terminating MNO will agree to with other originating operators. If an originating operator sought to secure a lower MCT charge with an MNO than the one BT had secured with that MNO, the MNO can refuse direct interconnection and force the originating MNO to transit traffic via BT. This ensures that the originating operator pays the same termination charge as BT. For this to be the case the originating operator must not be willing to accept a situation in which it does not interconnect with the MNO. As discussed later in paragraphs 5.89 – 5.107 Ofcom considers that it is unlikely that an originating operator could credibly threaten not to interconnect and in practice there is no compelling evidence that an originating operator has sought to use its bargaining power to secure a lower charge compared to that paid by BT.
- 5.34 These considerations are evidenced by the fact that, where termination prices are not regulated, MNOs do not charge each customer a different termination charge (as discussed in Section 3). Data received from each of the MNOs confirms that they charge the same price for termination to all originating operators. [38.]
- 5.35 Furthermore, Ofcom considers that if an originating operator sought to secure a lower charge and the MNO refused to interconnect directly the negotiations would likely be referred to Ofcom as a dispute. Therefore, how Ofcom would resolve a dispute between two parties without SMP in this context is a relevant consideration in determining the level of CBP. This is discussed in paragraphs 5.96 – 5.104 below.
- 5.36 Therefore Ofcom considers that BT's charge (as a transit operator) conditions negotiations and effectively sets the charge for all other agreements between suppliers and purchasers of MCT. Even if this were not the case, the fact that BT is by far the largest purchaser of MCT means that if it were found not to have a level of CBP sufficient to negate any prima facie finding of SMP, it would follow that neither would any other purchaser of MCT.
- 5.37 Given the above, the relevant question for this SMP assessment of MNOs supplying MCT is the CBP of BT. Nevertheless, whilst Ofcom believes this is the relevant question, Ofcom, for completeness, has also considered below the position of other purchasers of MCT.

## **Review of evidence related to previous negotiations of MCT**

### **Contracts for MCT**

- 5.38 Contracts for interconnection between BT and each of the 2G/3G MNOs, and between each of the 2G/3G MNOs, were first agreed some eight to ten years ago. Although amendments to terms and conditions have subsequently been agreed from time to time (as noted below), the basic form of the contracts is substantially unchanged. In 2001 Vodafone instigated perhaps the most fundamental changes to its contracts with parties other than BT, when it initiated a lengthy process to replace its bilateral contracts (which had provided for both purchase and supply of termination services by Vodafone) with a series of mostly paired contracts each separately providing for purchase or supply by Vodafone (but not both). BT's Standard Interconnection Agreement ("SIA"), the terms of which apply to a very wide

range of different interconnection services purchased and supplied by BT, has also been subject to change over the years, perhaps most significantly in 1998 when changes were made to reflect Oftel's decision that BT's charges would no longer be determined annually by Oftel but, instead, regulated via a series of charge control baskets. By contrast, contracts between H3G and BT and each of the 2G/3G MNOs were agreed as recently as 2002. Although contracts exist between H3G and all 2G/3G MNOs, mobile voice call termination is supplied by H3G only to BT and O2 (with whom H3G has a national roaming agreement which also necessitates the provision of interconnection links).

- 5.39 When the contracts which apply to mobile voice call termination were first agreed variously between BT and the 2G/3G MNOs and between the 2G/3G MNOs, the relevant circumstance were very different to those of today. The regulatory frameworks applicable to BT and to the 2G/3G MNOs were not the same, in that the MNOs' charges for voice call termination were not regulated whereas BT's interconnection charges were subject to regulation. Similarly, penetration and usage of mobile telephony (and direct interconnection between MNOs) was far less extensive than today, and (with the exception of Vodafone) the corporate ownership and structure of the 2G/3G MNOs was very different from today. In Ofcom's view, an analysis of the process by which these interconnection agreements were first negotiated up to 10 years ago would serve little purpose (even if the parties were able to retrieve archived correspondence sufficient to take an accurate view; [§<]).
- 5.40 In respect of BT's interconnect agreement with H3G, Ofcom has undertaken a detailed review of available evidence in respect of negotiations between H3G and BT prior to the establishment of the interconnection agreement in January 2002 in order to identify factors which remain relevant in undertaking the assessment of the extent to which BT can exert CBP in the relevant period. From the evidence it is clear that the balance of the relationship between BT and H3G has evolved over time, for example as H3G has grown and become more established. Ofcom makes its assessment in relation to the relationship as it existed and is likely to continue during the period of this review. Ofcom's consideration of the relationship between BT and H3G up to March 2007 is contained in the Reassessment of H3G's SMP also published today.
- 5.41 Ofcom has also reviewed the terms of the present interconnect agreements between BT and each of the MNOs, as well as the contracts between the MNOs, and has considered the circumstances in which recent charge changes have been agreed. Ofcom recognises that, as Orange noted in its response to the March 2006 Consultation, where contracts for the supply of MCT are already in place, these may impose some constraints on the ability of either of the parties unilaterally to alter charges.
- 5.42 In Ofcom's view, the form of BT's SIA (which applies to mobile voice call termination purchased by BT and almost all other interconnection supplied or purchased by BT) is still influenced strongly by regulation, reflecting the extensive regulatory constraints on BT's ability to agree bespoke terms and conditions and BT's obligation to comply with charge controls and regulatory directions and determinations. Importantly, the SIA is also set against the background of the ability of interconnected parties (BT and third parties) to take disputes to Ofcom for resolution. While the SIA may appear to provide greater freedom for BT to alter unilaterally its charges for interconnection, and for BT to propose changes to termination charges of the MNOs, while failing to provide contractual provision for MNOs to propose changes to BT's interconnection charges, Ofcom does not believe this is a reflection of CBP held by BT. Rather, it is a reflection of regulatory constraints which prevent BT from negotiating bespoke

charges, and other terms and conditions in respect of many services. It should also be noted that paragraph 4.14 of the Guidelines published by Oftel in 1997 (*Guidelines on the operation of the Network Charge controls*<sup>37</sup>), when Oftel altered the regulatory provisions for setting BT's charges for providing interconnection, stated that, subject to specified changes (which were subsequently incorporated within an amended SIA), terms and conditions reflecting those "in BT's Standard Agreement for interconnection in effect on 30 September 1997 will generally be reasonable". These conditions remain, substantially unchanged in the BT SIA currently in force today.

- 5.43 The terms of the interconnection agreements between MNOs for the provision of MCT are either reciprocal within each contract (the same terms applying to both parties in their capacities of either purchaser or supplier) or, in the case of current contracts to which Vodafone is party, are mirrored in a pair of contracts providing for the same, or very similar, terms to apply where Vodafone is the purchaser or the provider.
- 5.44 The terms relating to charge changes vary between the contracts, although, as noted above, they are symmetrical between the parties to the contract, or pair of contracts. However, as already discussed Ofcom recognises that, all contractual arrangements must be viewed against this regulatory backdrop which provides a unifying factor.
- 5.45 Ofcom has reviewed the process by which Vodafone implemented fundamental changes to its contracts with parties other than BT during the period 2001 to 2003. While the exercise appears to have been initiated on a unilateral basis by Vodafone, negotiation of the revised contract terms appears to have been conducted with a high degree of interaction between the parties and with a sense that it would be mutually beneficial to agree pragmatic and efficient contractual arrangements for managing the relationship. Furthermore, the fact that, where the parties both purchase interconnection services from each other, the texts of each of the two new contracts almost precisely mirror each other, tends to support the view that the outcome was achieved through genuine negotiation between parties.
- 5.46 As noted in paragraph 5.38 above, the terms and conditions applicable to the supply of MCT by H3G to BT are those of BT's SIA and, given the regulatory constraints under which BT operates, reveal little about the bargaining position of the parties. The contracts between H3G and the other MNOs are broadly similar to those agreed by those other MNOs with other purchasers of MCT.

### **Negotiation of charge changes**

- 5.47 As charges for the supply of MCT on the 2G networks of the 2G/3G MNOs have been regulated (or under the threat of regulation) since 1998/9, changes by these MNOs during that time have all been made within the regulatory framework, reflecting either a change to the charge control imposed by Ofcom or changes to traffic profiles which have triggered changes to charges by time of day/week (within the scope of the charge control). The documentary evidence obtained from MNOs by Ofcom, indicates that, until very recently, these changes have been infrequent and uncontested (being within the established regulatory framework). [§<].
- 5.48 The existence of charge controls has, therefore, meant that, until recently, no attempt has been made to exercise any CBP in respect of purchases of MCT from the 2G/3G MNOs by any third parties.

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<sup>37</sup> See [http://www.ofcom.org.uk/static/archive/oftel/publications/1995\\_98/pricing/ncc1097.htm](http://www.ofcom.org.uk/static/archive/oftel/publications/1995_98/pricing/ncc1097.htm)

- 5.49 It is also notable, however, that in respect of MCT on 3G networks (which is unregulated) each of the 2G/3G MNOs has sought to levy, within its blended charges, charges for 3G termination which are between two and three times as much as Ofcom's assessment of the cost of 3G termination by an MNO with both a 2G and a 3G network. Furthermore, [REDACTED].
- 5.50 The process of blending unregulated implicit charges for 3G MCT with regulated charges for 2G MCT was first adopted by Vodafone in 2005 but, in view of the very low volumes of voice call minutes forecast to be terminated on Vodafone's 3G network (and assumed by the blending), blending does not seem to have been apparent to purchasers until the early part of 2006. Vodafone's charge changes implemented on 1 June 2005, therefore, passed uncontested, as they were assumed by purchasers to be fully constrained by charge controls. When the basis of Vodafone's charges became more fully apparent during January 2006, purchasers expressed serious concern to Ofcom and it was questioned whether the charges applied were in breach of the charge control condition. In January 2006 Ofcom said that Vodafone (and any other MNOs which chose to blend distinct charges for 2G and 3G termination) should ensure that the basis of such charges were made apparent to purchasers.
- 5.51 Five months later, in July 2006, O2, Orange and T-Mobile each, within a space of 3 days, separately notified Ofcom that they intended to blend distinct charges for 2G and 3G MCT, thereby increasing their blended charges. A week earlier Vodafone had notified Ofcom of a proposal to reduce its blended charges from 1 September 2006. Having subsequently obtained documents from BT and the 2G/3G MNOs, it became apparent that the following sequence of events had occurred;
- [REDACTED]
  - [REDACTED]
  - [REDACTED]
  - [REDACTED]
  - [REDACTED]
- 5.52 Whether the parties to these proposals will resolve their differences or will seek dispute resolution from Ofcom (as provided for by the SIA as well as by the Communications Act) remains to be decided as of the date of the publication of this consultation. Ofcom recognises, as does BT and the MNOs concerned, that these attempts to increase (and decrease) charges, and the response of purchasers to the proposals, may be considered significant in the context of an assessment of whether suppliers have SMP and whether any purchasers have CBP. However, in Ofcom's view, the timing of the recent proposals to vary MCT charges, means that it is very difficult to determine to what extent the behaviour of the parties (suppliers and purchasers) has been affected by awareness of the significance which might be read into such behaviour.
- 5.53 Having reviewed the documentation obtained by Ofcom from BT and the five MNOs, it is Ofcom's view that negotiation in respect of charges for MCT is focussed largely on the regulatory constraints under which each party operates. Purchasers and suppliers of MCT appear to be strongly aware of their own obligations and the obligations of the other party, whether as a consequence of ex ante regulation or competition law, not to unduly discriminate when negotiating supply or purchase of

MCT. As a consequence, much of the recent negotiation appears to have been concerned with establishing whether the other party (purchaser or supplier) was treating other parties differently; suppliers being concerned with whether purchasers (typically BT) had accepted charge changes from other suppliers, and purchasers being concerned to establish whether the proposed charge changes had been proposed to and accepted by all other purchasers. Suppliers frequently attempted to justify the revised level of their blended charges by drawing comparisons with the charges of other UK MNOs.

- 5.54 The parties generally appear to have been unfamiliar, at least at the outset of negotiations, with the operation of the commercial contracts for supply of MCT and frequently unsure how an attempt to impose or resist a charge change would be played out under the terms of those contracts. In some instances, this unfamiliarity (more obvious amongst some parties than others) has been exploited as one of the very few means to establish a degree of advantage, albeit short-lived, over the other party.
- 5.55 One of the more common means to obstruct the imposition of charge changes appears to have been by exploiting administrative failures by the other party, typically, failure to meet the letter of the minimum notice periods set out in the relevant contract, or failure to deliver proposals using the mechanism required by the contract (e.g. fax, email or post). Added complexity is sometimes achieved by playing out such strategies in the light of the other party's anxiety about claims that they are acting in an unduly discriminatory fashion. In such cases, the supplier's attempts to comply with contractual notice periods (which vary between purchasers) while simultaneously attempting to impose uniform charges on all purchasers, can have the effect of bringing progress to a halt. These, essentially bureaucratic, strategies can hinder the imposition of charge changes but, ultimately, appear to be viewed by all parties as no more than short term delaying tactics.
- 5.56 Internal discussion, within suppliers and purchasers, intended to identify sources of commercial leverage, appears largely confined to consideration of whether outright refusal to accept charge changes, or unilateral insistence on such changes, might be successful. Ofcom has found no material evidence that any of the parties believe they have any tools with which to bargain for a commercially acceptable intermediate outcome, as might be expected in a competitive market. Recognition of the absence of conventional bargaining tools appears to prompt early consideration of regulatory and legal factors, including whether the behaviour of one or other party would be considered as evidence of CBP or would be viewed by Ofcom as being in breach of prohibitions of undue discrimination.
- 5.57 Familiarity, or lack of familiarity, with the regulatory regime on the part of those involved in discussion of negotiating options, often seems to be a key determinant of the views of the different managers involved in these internal discussions. At one extreme, a proposal by one purchaser [X] that the MCT charges of [X] should be reduced was viewed by one members of the supplier's team as unacceptable because the proposal was "purely for commercial reasons" and the purchaser had "put forward no substantive legal or regulatory reasons for proposing a reduction". At the other extreme, another manager employed by the same MNO took the view, in the context of a proposed increase in MCT charges by another MNO, that "we have no obligation to enter into this discussion ... the fact that our rate is [X] than [X]'s is not an issue if the service is not regulated." More neutral, a manager with another supplier of MCT [X] asked whether the purchaser has "got grounds to reject our blended rates or can we simply advise [him] of the rate change". A senior manager of yet another supplier of MCT asked his team, about a purchaser which had indicated

unwillingness to accept a charge change, “ does [X] actually have a choice?”, to which the relevant operational manager responded “I cannot be 100% clear on that yet”. It is interesting to note that, 2 weeks later, the focus of that particular supplier was strongly directed towards an assessment of the possible regulatory outcomes of different strategies, including the impact on Ofcom’s assessment of the purchaser’s CBP. In summary, while different managers appear to have recommended different strategies when attempting to impose or reject charge changes, none appear to have taken the view that a negotiated settlement could be achieved.

- 5.58 Ultimately, when the wider legal and regulatory resources of the company have been brought to bear on the issue, BT and the five MNOs each appear to have concluded that the outcome will be strongly influenced by regulation. Furthermore, none of the parties appear to have a clear view of whether other parties would take a dispute to Ofcom or, if they did, what would be the outcome. As one party put it [X] “it is a moot point whether we would refer this to Ofcom, but [X] needs to believe we will”. Another party [X] appears to have taken the view that there might be merit in referring a complaint to Ofcom, not in order to see a dispute resolved but, rather, to ensure that “Ofcom ropes in 3G from 1 April 2007”. A senior manager with the same party, when faced with intransigence by another party, asked his team “what are the implications for Ofcom’s term rate review (and responses to H3G’s SMP challenge/CAT verdict) of this development”.

### **Evidence of bargaining in the absence of regulation (or the threat of regulation)**

- 5.59 As noted above, any analysis of the existence of SMP in a given market must be undertaken within a framework which assumes, for the purpose of the assessment, that the market is not subject to regulation or the threat of regulation arising from a finding of SMP in the market. Ofcom considers that the behaviour of purchasers and suppliers of MCT, in respect of the recent proposals to increase or decrease MCT charges has been strongly conditioned by the existence or threat of regulation in these markets, and by the expectation that these markets may be subject to further regulation from April 2007. Ofcom’s March 2006 Consultation set out the prima facie evidence of SMP and expressed a preference for using a technology neutral form of charge control which would apply to both 2G and 3G MCT. Similarly, BT’s agreement (and the agreement of other purchasers) to Vodafone’s proposal to increase charges in June 2005 seems to have been influenced by a belief that the charge was fully constrained by regulation. As such, Ofcom does not believe that the behaviour of BT or the MNOs mirrors the behaviour likely to be observed absent regulation or the threat of regulation.

### **Assessment of purchasers’ countervailing buyer power**

- 5.60 In the following paragraphs Ofcom considers the issue of CBP in light of the criteria set earlier and by reference to the evidence above. This section assesses for the period 1 April 2007 to 31 March 2011 the extent to which purchasers of MCT can exert sufficient CBP so that prices charged by MNOs for MCT are constrained to the competitive level.

### **The purchaser as an important outlet for the seller**

- 5.61 For the buyer to be able to affect the seller’s terms of trade, the buyer must be an important outlet for the seller. In this context, the ERG suggests a number of factors which determine the scale of the countervailing power on the part of buyers:

“...The higher the amount of purchase of services by customers or the higher the proportion of the producer’s total output that is bought by a certain customer, the stronger the countervailing power might be. ...

... Further to this, the higher a seller’s locked-in investment in specific customers (asset specificity), the more willing he will be to negotiate. Overall, this criterion is more meaningful in wholesale markets, because providers purchasing network services from other providers are in general more visible and powerful than retail customers.”<sup>38</sup>

- 5.62 Being an important customer may confer a degree of buyer power on the buyer, because the seller will be more willing to negotiate with a customer it cannot afford to lose.
- 5.63 The various direct purchasers of MCT are unlikely to be perceived as equally important by terminating MNOs, and different terminating MNOs may take a different view of the various purchasers of MCT on their network(s). For example, some terminating MNOs receive a larger proportion of inbound voice traffic directly from originating operators than do others (reflecting the varying reliance on direct interconnection as opposed to BT transit).
- 5.64 BT is an important customer for all terminating MNOs. BT continues to purchase more than half of all UK off-net termination on mobile networks. This is because BT buys termination for its own subscribers originating calls on its networks and also acts as a transit operator for other FNOs and MNOs. Furthermore, BT has always had a significantly larger subscriber base than any of the MNOs. BT has approximately 28m subscriber lines. In contrast, each of the 2G/3G MNOs has between 12 million and 18 million customers (those figures are believed to be somewhat inflated by churn management practices which, for a period of time, leave some non active customers on an MNO’s subscriber records). H3G reports that its currently registered subscriber base is over 3.5 million.
- 5.65 As a consequence, it is necessary for all MNOs to maintain an interconnect agreement with BT. Current and prospective subscribers of each MNO would see relatively little value in a network which precluded making calls to and receiving calls from BT’s retail customers and customers of other providers which rely on BT to provide transit services to and from MNOs.
- 5.66 Whether any FNOs other than BT are perceived by terminating MNOs as important outlets for MCT is less obvious. Many originating FNOs rely entirely on transit services offered by BT (or, in some cases, by C&W), purchasing no MCT directly from any MNO. Some have direct interconnection with one or more MNOs, but all rely to some extent on transit services. No UK FNO other than BT purchases MCT directly from H3G [3<].
- 5.67 As all originating FNOs have the option to purchase transit services from BT, terminating MNOs will be aware that, in the event of failure to reach agreement on terms for direct interconnection, the FNO is likely to purchase transit services

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<sup>38</sup> See paragraph 11 “Revised ERG Working paper on the SMP concept for the new regulatory framework”, October 2004, (See [http://www.erg.eu.int/doc/publications/public\\_hearing\\_concept\\_smp/erg0309rev1\\_smp\\_working\\_doc.pdf](http://www.erg.eu.int/doc/publications/public_hearing_concept_smp/erg0309rev1_smp_working_doc.pdf) )

instead, resulting in no loss of MCT revenue to the terminating MNO and no loss of incoming calls valued by the terminating MNO's own retail customers. On this basis it might be considered that none of the FNOs other than BT are perceived as important direct outlets (actual or potential). Furthermore, Ofcom has no compelling evidence that any FNOs consider themselves sufficiently important outlets that they have attempted to obtain directly from MNOs terms which are better than those obtained by BT, for example by threatening to cease both direct purchases and purchases via BT's transit service if improved terms are not offered. Even where the extent of direct purchases of MCT increases, the availability of BT transit services is likely to continue to reduce the importance of other FNOs as purchasers of MCT.

- 5.68 As discussed above, to a large extent, the importance of originating MNOs as outlets for MCT is similarly affected by the availability of BT transit services, even though a much larger proportion of MNO originated voice calls are terminated via direct termination arrangements with terminating MNOs than is the case with FNOs other than BT. Each of the 2G/3G MNOs now sells MCT directly to each of the other 2G/3G MNOs. The only operator other than BT to whom H3G sells MCT is O2, which also provides a national roaming service which necessitates the provision of direct interconnect links. Whether H3G has plans to use direct interconnection with a range of other fixed and mobile networks is not known. Nevertheless, the availability of BT transit is likely to continue to condition H3G's views of the importance of other MNOs as outlets for MCT, as it continues to condition the views of other terminating MNOs.
- As such, it can be concluded that BT is an important outlet for all sellers. Given the availability of transit services, however, whether other purchasers are also important outlets is less clear. They are unlikely to be as important as BT.

### **The purchaser as a well-informed and price sensitive buyer**

- 5.69 As discussed in paragraph 5.8 the better informed a purchaser is as to the price and quality of the service the more ready they might be to switch suppliers or to reduce demand.
- 5.70 Information, for example on the importance of the deal to the seller or the level of costs incurred by the seller in providing the service, may improve the buyer's bargaining position and allow it to better substantiate and defend its negotiating strategy vis-à-vis the seller.
- 5.71 However, knowledge and price sensitivity alone are insufficient to constrain prices: it is also necessary for the prospective buyer to have the ability to act on its knowledge or sensitivity.
- 5.72 A buyer's credibility in negotiations with a seller is enhanced where the buyer understands how important his custom is to the seller, and has some insight into the seller's operations and negotiating strategy. It may reasonably be assumed that all purchasers of MCT, being major commercial undertakings, are well informed and price sensitive buyers with extensive commercial expertise.
- 5.73 Wholesale termination charges (whether paid directly to the MNO or through BT as part of the cost of BT's transit services) make up a significant proportion of the cost base for originating operators in providing calls to mobiles. Therefore, to the extent that they impact on the retail price for these calls and therefore on the customers of originating operators, originating operators will be sensitive to wholesale termination charges.

- 5.74 Whilst, during the start-up phase of its business, H3G's charges for MCT represented only a very small proportion of any purchaser's total expenditure on MCT, this has changed as H3G's subscriber base has grown. As termination on H3G's network represents an increasing cost, purchasers are likely to become increasingly sensitive to the price it pays for that service. The evidence cited in paragraph 4.90 of the Reassessment of H3G's SMP supports the view that BT, the largest purchaser of MCT, is sensitive to the level of H3G's charges, and this sensitivity is likely to continue to grow with the growth in H3G's customer base. Therefore, it can be assumed that all purchasers of MCT have an incentive to try and negotiate competitive prices with all five MNOs.
- 5.75 Moreover, originating operators face five terminating MNOs and therefore can make price comparisons across MNOs for what their customers would likely perceive to be the same service i.e. calling a mobile. It appears, therefore, that originating operators have the ability and incentive to compare the charge offered by one seller with that offered by another, consider other wider repercussions an agreement with one supplier may have for similar agreements with others, and recognise the implications of MCT charges for the retail prices faced by its subscribers for calls to mobile networks.
- As such, it can reasonably be concluded that all purchasers of MCT are well informed and price sensitive buyers.

### **Reciprocity of trade between the purchaser and seller**

- 5.76 Telephone networks generally negotiate termination charges with each other on a bilateral basis. This is because customers on one network would look unfavourably on a situation where they were able to make calls to customers on another network, but were unable to receive calls from them. However, when considering the impact such reciprocity may have on countervailing buyer power in this review, it is important to note that the termination charges of BT and other FNOs are constrained by regulation. This regulation exists independently of a finding of SMP on any of the MNOs supplying MCT and therefore, as discussed above, should be taken into account. However, it must also be assumed that mobile termination charges are unregulated since MNOs are subject to ex ante regulation on MCT that would not exist independently of an SMP finding in the market under review. Therefore analysis of reciprocity is different as between fixed and mobile operators and mobile operator to mobile operator.
- 5.77 Absent regulation, the extent of BT's buyer power will be influenced by the extent to which it can take into account the prices it charges for its own services as part of the negotiations. For example, BT, with a market share of around 80% of fixed network subscribers, might potentially be able to exert significant bargaining power in respect of an MNO's price for MCT by varying, or threatening to vary, its charge for fixed network termination in response to proposals for mobile termination charges. However, BT's termination rate is determined by regulation<sup>39</sup>. As a consequence, the price BT charges an MNO for termination on BT's network cannot influence the negotiations of the price the MNO charges BT for MCT on its network. It cannot therefore be considered to be a source of BT's bargaining strength.
- 5.78 Where BT sells other services, for instance leased lines, to an MNO, it might be able to adjust the terms on which it sell those services in the course of negotiation of the

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<sup>39</sup> See <http://www.ofcom.org.uk/consult/condocs/charge/statement/>

mobile call termination rate with the MNO. However, where BT has SMP it is constrained by regulation from unduly discriminating.

- 5.79 FNOs other than BT are required by regulation to offer termination on their networks on fair and reasonable terms, which Ofcom has defined by reference to BT's charges.<sup>40</sup> As a consequence, the price they charge an MNO for termination on their network cannot influence the negotiations of the price the MNO charges them for MCT on their networks and cannot therefore be considered to be a source of bargaining strength for FNOs.
- 5.80 By contrast, absent regulation, an originating MNO faced with a high price for termination provided by another (unregulated) MNO may threaten to charge a similarly high (unregulated) price for termination on its network to that MNO. However, whether or not this is a credible threat depends on the impact this would have on the profitability of both MNOs.
- 5.81 If traffic between MNOs is balanced then the threat is not effective as a means of constraining the charges of a terminating MNO. The threat of higher reciprocal charges does not change the profitability of the terminating MNO. In this situation, as noted by respondents to the March 2006 Consultation, the outcome for charges could be that MNOs agree to charge each other relatively high or low charges. However, the evidence and theory in this area is not conclusive.
- 5.82 However, if the originating MNO is a net receiver of calls the terminating MNO will face a net cost associated with such a reciprocal agreement. Therefore the threat, to respond to a high termination charge by setting a similarly high termination charge in return, is a credible one for an MNO engaged in a reciprocal negotiation with another MNO from which they are a net receiver of calls.
- 5.83 Nevertheless in practice Ofcom does not consider that this threat is particularly strong. MNOs do not know whether they are net receivers of traffic from each other because at present incoming traffic is often from operators who have used BT as a transit operator. In addition, mobile subscriber churn is significant and this may lead to a lack of stability in the calling behaviours of subscribers (and in whether an MNO is a net receiver of calls from another MNO).
- 5.84 Moreover, as discussed above and by respondents to the March 2006 Consultation, where charges have already been agreed between BT and other MNOs for mobile termination, if any originating MNO threatens to charge a higher termination charge in order to improve its negotiating position with a terminating MNO, the terminating MNO can simply transit traffic via BT and nullify the threat of a high termination charge.
- As such, it is Ofcom's view that whilst reciprocity or the lack thereof may affect the CBP of purchasers, the ability of all purchasers to transit traffic is a key consideration for both purchaser and seller of MCT.

### **Lack of alternative sources of supply**

- 5.85 The ERG explains that in order to constrain the seller's price effectively, the purchaser must be able to bring some pressure to bear on the supplier to prevent a price rise:

<sup>40</sup> See further the fixed geographic call termination market review statement - [http://www.ofcom.org.uk/consult/condocs/narrowband\\_mkt\\_rvw/Eureviewfinala1.pdf](http://www.ofcom.org.uk/consult/condocs/narrowband_mkt_rvw/Eureviewfinala1.pdf)

“...The extent of countervailing buyer power largely depends on whether customers can credibly threaten to switch to other suppliers, to self-provide the service, to significantly reduce consumption or to cease to use the service at all in case of a price increase...”<sup>41</sup>

- 5.86 Where the buyer may be able to induce competition between sellers, for example via a procurement auction, the buyer can be expected to have considerable power to determine the terms of trade.
- 5.87 A further consideration is the extent to which the buyer is able to self-provide the good or service in question. If so, this would present the buyer with an alternative to purchasing from the prospective seller, thereby presenting the buyer with a bargaining mechanism.
- 5.88 As discussed in paragraph 3.105 above, it is only the terminating MNO that can terminate calls on its own network and therefore competitive entry by an alternative supplier cannot be expected; there are absolute barriers to entry.
- Therefore no originating operator (buyer of termination) can seek to enhance its bargaining position by relying on competition between sellers nor can it opt to self-supply.

### **Option not to purchase (or to delay)**

- 5.89 Absent other potential sources of supply (i.e. third party or self-supply), a buyer may bring pressure to bear on the seller in the event that it can threaten credibly not to purchase the service (or, to a lesser extent, to threaten to reduce the amount it purchases). This source of negotiating strength is not based on the buyers' capability to substitute the service - even if at some cost - for a similar service but, rather, on the relative importance to the buyer and the seller of reaching a deal and the ability of the buyer to credibly threaten not to purchase.
- 5.90 In the context of the establishment of an initial agreement between the buyer and seller, a further relevant consideration is the extent to which the buyer can threaten credibly to delay. However, this is not a relevant factor in this case because interconnection agreements with all of the MNOs (as providers of termination) have been agreed with all existing direct purchasers (including other MNOs).
- 5.91 While all of these contracts require the parties to observe minimum notice periods in the event that either party wishes to terminate or modify a contract, none require the purchaser to buy a minimum quantity of MCT and none require the purchaser to ensure that his retail customers are able to call mobile phones connected to the supplier's network. Thus, the contracts do not prevent purchasers from ceasing to purchase MCT, or threatening to cease purchasing MCT, permanently or temporarily, while renegotiation of prices or other terms and conditions takes place.
- 5.92 It is therefore relevant to assess the extent to which a threat to refuse to continue purchasing MCT would provide an originating operator with buyer power such that it could influence in its favour the price charged by a terminating MNO for MCT. In this respect Ofcom has identified two issues:

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<sup>41</sup> See paragraph 11 “Revised ERG Working paper on the SMP concept for the new regulatory framework”, October 2004, (See [http://www.erg.eu.int/doc/publications/public\\_hearing\\_concept\\_smp/erg0309rev1\\_smp\\_working\\_doc.pdf](http://www.erg.eu.int/doc/publications/public_hearing_concept_smp/erg0309rev1_smp_working_doc.pdf) )

- 5.93 Firstly, the exercise of such a threat may result in negotiations being referred to Ofcom under its powers to resolve a dispute. Therefore, the parties' expectations of how Ofcom would resolve such a dispute are an important consideration in the negotiation and therefore will affect the level of countervailing buyer power.
- 5.94 In the case of BT, its obligation to provide end-to-end connectivity is a relevant consideration in how Ofcom would resolve a dispute between BT and MNOs supplying MCT. BT's end-to-end connectivity obligation requires BT to purchase termination from each of the MNOs. If the obligation on BT to purchase termination were absolute, BT would not have any buyer power at all. However, the obligation on BT is not an absolute one; termination has to be offered by the MNO on reasonable terms and conditions. Therefore if BT does not consider the terms and conditions offered by the MNO for termination to be reasonable, it can refer a dispute to Ofcom in order to try to obtain more favourable terms and conditions, as can any prospective purchaser of MCT.
- 5.95 Secondly, the threat to cease purchasing may not be a credible threat from a commercial perspective. The credibility of the threat is related to how important it is for an originating operator to provide calling for its subscribers to the subscribers of a particular terminating MNOs' network.

### **Ofcom's dispute resolution powers**

- 5.96 As discussed in paragraphs 5.18 to 5.20 above, Ofcom considers an undertaking can not be found not to have SMP simply because of the fact that a regulator may exercise its dispute resolution powers. To do so would, in the words of the CAT, be "illogical". However, in the alternative Ofcom sets out below how it would resolve disputes
- 5.97 As discussed above, purchasers of MCT can refer a dispute to Ofcom if they are unable to agree terms with a particular MNO. The effectiveness of any threat to refer a dispute to Ofcom in achieving lower charges for a purchaser has an important bearing on the likely outcome of negotiations on charges for MCT. This is because, if both parties have a reasonable expectation of a specific outcome of a dispute, this expectation will shape any agreement on charges, even absent any intervention by Ofcom. Furthermore, the negotiated outcome could approximate to the expected outcome of a dispute resolved by Ofcom in certain circumstances, because both parties know that the other will have an incentive to refer if it considers that it has something to gain from so doing.
- 5.98 Ofcom considers that a terminating MNO would not have SMP if the expectations of the parties to a dispute were that Ofcom would resolve the dispute by setting a charge for MCT at the competitive price level. The proxy for the competitive price level used in the last MCT market review was a strict cost oriented charge based on LRIC plus mark-ups for common cost and externality.
- 5.99 Only in this case is the purchaser able to exercise sufficient CBP through the threat of referring a dispute to Ofcom. Therefore, a purchaser's and supplier's view of the effectiveness of a threat to refer a dispute to Ofcom will be determined by its expectation of the outcome in the event that a referral takes place.
- 5.100 In the exercise of its dispute resolution powers, Ofcom will consider each dispute or complaint on its merits, and may employ a number of alternative methodologies to assess what might be an appropriate charge for example, for MCT supplied by a particular MNO. As discussed, the CBP of BT is particularly important. If BT was to

refer a dispute to Ofcom, it would be important for Ofcom to take into account BT's obligation to provide end-to-end connectivity and therefore to purchase termination provided it is offered on reasonable terms and conditions. This obligation will affect how Ofcom determines a dispute. However, in general, any intervention by Ofcom has to be appropriate and proportionate to remedy the issues identified. Depending on the dispute, possible outcomes might be that Ofcom decides to:

- Consider whether alternative dispute resolution (ADR) is an option;
- Uphold the charge proposed by the MNO so long as it is not unreasonable;
- Develop an understanding of the extent to which BT and the MNO would generate net gains from trade, imposing an outcome that shares these gains on some basis between the parties to the dispute;
- Undertake a benchmarking exercise of relevant comparators and draw conclusions as to an appropriate termination charge based on those benchmarks;

5.101 Ofcom notes that this list of outcomes is not exhaustive. The above illustrates that Ofcom has a broad range of options at its disposal should it be required to intervene to resolve a dispute and that there is no certainty as to the outcome of the dispute resolution.

5.102 In the particular case that is relevant in this assessment of CBP, where a supplier does not have SMP, it is unlikely to be either proportionate or appropriate for Ofcom to impose a strictly cost orientated charge. In the event of a dispute over interconnection charges between two parties who do not have SMP, Ofcom, in determining a charge, would have to strike the appropriate and proportionate balance between the expected benefits of its intervention, such as addressing consumer detriment by ensuring lower prices for end customers and in the specific case of BT ensuring end-to-end connectivity, and the expected costs, such as the risk of disincentivising investment by setting a relatively restrictive charge. The absence of SMP is relevant to the way in which this balance would be struck.

5.103 In Ofcom's view this suggests that neither party in a negotiation over MCT, where the MNO had not been found to have SMP, is in a position to assume that the resolution of a dispute by Ofcom (either in the context of end-to-end connectivity or otherwise) would result in a strictly cost oriented charge. Instead, absent a prior SMP finding, any charge determined by Ofcom may be expected to lie within a broader range.

5.104 In the case of resolving a dispute between BT and a supplier of MCT who did not have SMP, Ofcom's underlying objective would be to ensure the provision of end-to-end connectivity, as set out under Article 5 of the Access Directive. Therefore, the focus of Ofcom's intervention would be to prevent the charges from leading to a lack of such connectivity. More broadly, for the reasons stated in paragraphs 5.98 to 5.102 above, in the case of a dispute between any purchaser of MCT and a supplier without SMP, Ofcom would be unlikely to consider a strict cost oriented charge which as discussed above in paragraph 5.98 is a proxy for the competitive price level.

- Ofcom considers that bringing a dispute to Ofcom or the threat of doing would be insufficient to constrain MCT charges to the competitive level. Therefore Ofcom does not accept the argument presented by Vodafone and by H3G in their responses to the March 2006 Consultation, that the ability to refer disputes to Ofcom affords purchasers sufficient CBP to constrain MNOs charging above the competitive price level.

## Commercial considerations

- 5.105 In general, the larger an MNO's network, the greater the likely value to the customers of another originating operator of being able to call the subscribers of that MNO network and conversely the greater the commercial damage to the originating operator if its subscribers cannot call that network.
- 5.106 All five MNOs have significant numbers of subscribers on their networks and H3G, the smallest MNO continues to grow its subscriber base. Therefore Ofcom considers that there would potentially be a significant commercial imperative for most originating operators to provide their subscribers with the opportunity to call the different mobile networks. Indeed the evidence suggests that BT, the largest purchaser of MCT, regarded the entry of H3G in 2001 as an opportunity for incremental income from its retail customers.<sup>42</sup> BT therefore had an incentive to purchase call termination services from H3G.
- 5.107 It is theoretically possible to envisage an originating operator offering calling services to its subscribers that do not enable them to call mobiles or a specific mobile network. Such a strategy would afford this operator the ability to threaten not to purchase termination. However, the operators today have not positioned themselves in this way. They generally seek to offer their customers the ability to call anyone on any network. Furthermore, as the end-to-end connectivity obligation on BT (the largest provider of retail call services) means that BT must offer the ability to call the customers of all other networks, a provider which failed to offer a comparable level of service is likely to be viewed by consumers as deficient. In addition, as discussed in paragraph 5.28, although it is only BT that is subject to an end-to-end connectivity obligation it is Ofcom's view that all providers of Public Electronic Communications Networks should provide end-to-end connectivity and, if they did not, Ofcom may consider whether it were appropriate and proportionate to impose a similar obligation.
- In Ofcom's view, therefore, all originating operators face strong commercial pressure to purchase MCT.

## Review of H3G's evidence with regards to the economic framework

- 5.108 H3G has submitted that two papers by Harbord and Binmore should form the starting point for any further analysis to be undertaken by Ofcom. These papers set out a proposed economic framework for assessing CBP. In this section, Ofcom considers the arguments presented by Harbord and Binmore in their published paper, as well as David Harbord's submission to the CAT dated 28 July 2004.
- 5.109 Binmore and Harbord state that their model predicts that incumbent fixed network operators (BT) will never agree to pay H3G a termination rate which exceeds the cost of termination, and that it is likely that charges will lie between average 2G rates and the entrants' (3G) cost (assuming that the regulated 2G rates lie below the 3G cost of termination).<sup>43</sup>

<sup>42</sup> WPAG paper "Proposed termination rates for calls to H3G's mobile services", Internal BT paper dated 10 January 2002.

<sup>43</sup> "Bargaining over Fixed-to-Mobile Termination Rates: Countervailing Buyer Power as a Constraint on Monopoly Power", published in Journal of Competition Law and Economics.

- 5.110 As with every economic model, this result is based on a number of assumptions on the parties' incentives and their ability to act upon them.<sup>44</sup>
- 5.111 Critical to the results of Binmore and Harbord's model are the assumptions as to how Ofcom would resolve a referred dispute. The assumptions underlying Binmore and Harbord's results are that the regulator would either set a charge based on the average 2G rates or would set a cost based charge. Were these assumptions correct, Ofcom would agree that it is probable that the outcome of a negotiation would be likely to lie in this range. However, it is clear from the explanation of Ofcom's dispute resolution policy above that the assumptions made by Binmore and Harbord in respect of dispute resolution in the context of the end-to-end connectivity obligation are erroneous. As explained in paragraphs 5.96 to 5.104 where it was set out how Ofcom might resolve a dispute in the context of end-to-end connectivity, Ofcom has a broad range of options and is unlikely to set charges at a level set in the context of ex ante regulation following a finding of SMP.
- 5.112 Furthermore, as noted at paragraph 4.29 in the case of 3G mobile termination, Ofcom's cost modelling, set out in Section 9, indicates that the 3G charges presently levied by H3G are significantly above Ofcom's proposed view of the appropriate charges for MCT.
- 5.113 Finally, as regards the negotiations prior to the Initial Agreement, Binmore and Harbord considered the impact that impatience on the side of the seller (e.g. because his entire future stream of profits depends on the establishment of interconnection with BT) may have on the seller's bargaining position, concluding that it would weaken it considerably.
- 5.114 From the evidence before it, Ofcom considers that H3G did perceive the cost of delay prior to the establishment of the Initial Agreement to be significant since delay represented an opportunity cost to H3G through foregone income.
- 5.115 Further, whilst Ofcom has seen no compelling evidence that may suggest that BT artificially delayed establishing the Initial Agreement, it is possible that the fact that H3G was under pressure to conclude the initial negotiations on charges presented BT with a stronger bargaining position prior to the initial agreement.
- 5.116 However, the relative bargaining positions of the two parties – and hence the likely outcome of the analysis – changed significantly once an Initial Agreement had been reached and both parties had a sizeable customer base. In particular, once the initial termination agreement and charges were in place, there was no longer significant asymmetry in the cost of delay between the parties. Indeed, this change in situation is recognised by H3G in a letter to Ofcom after the establishment of the initial agreement where H3G informed Ofcom that it was hopeful that a reasonable commercial solution could be reached.<sup>45</sup>
- 5.117 In summary, following the establishment of the Initial Agreement, H3G has a clear commercial incentive to remain interconnected since BT is clearly an important –

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<sup>44</sup> As regards the assumptions relevant to the parties' incentives, Binmore and Harbord consider the factors of market saturation and negative externalities, which may reduce the incentives of the incumbent to come to an agreement. Although it is noted that the evidence provided by the parties has not validated these assumptions, Ofcom recognises that there may indeed be other reasons why BT – on a purely commercial basis – may have incentives to negotiate forcefully. This is explored in detail in the sections on the importance of BT as a buyer to H3G, and on BT's likely price sensitivity as a buyer.

<sup>45</sup> Letter from H3G to Ofcom dated 21 January 2002

probably its single most important – customer. Both BT and H3G could issue an OCCN and enter into price negotiations and, in the event that no agreement is reached, either party could refer a dispute to Ofcom. Harbord and Binmore erroneously assume that the best assumption about the outcome of such a process is that it would yield charges at cost or at the level of charges of the 2G operators. However, as Ofcom has explained, this is unlikely to be the case absent a finding of SMP on H3G. As a consequence, Ofcom does not find Harbord and Binmore’s arguments persuasive: their assumptions do not accord with the characteristics of the case and therefore their conclusion is not relevant.

### Proposed conclusions on CBP

- 5.118 In light of the factors explored above, it is Ofcom’s view that BT does not have sufficient CBP to constrain MCT charges to the competitive price level.
- 5.119 BT is an important outlet for all suppliers of MCT and is a well informed and price sensitive buyer, although the absence of reciprocity in negotiations between BT and suppliers of MCT means that BT may have less CBP than would be the case in the presence of reciprocity. There are, however, no alternative sources of supply and BT is unable to self supply. BT faces strong commercial pressure to purchase MCT and, furthermore, is obliged by its end-to-end connectivity obligation to purchase MCT (but not on whatever terms a supplier specifies).
- 5.120 To the extent that it is appropriate to consider the impact of dispute resolution on BT’s ability to exercise CBP, Ofcom considers that BT’s ability to bring a dispute to Ofcom or the threat of doing would be insufficient to constrain MCT charges to the competitive level, for the reasons set out above.
- 5.121 It is also Ofcom’s view that no other purchasers of MCT (whether FNOS or MNOs) have sufficient CBP to constrain MCT charges to the competitive level. These too are well informed and price sensitive buyers, although the absence of reciprocity in negotiations between FNOs and suppliers of MCT means that FNOs may have less CBP than purchasing MNOs. There are, however, no alternative sources of supply and no originating operators are unable to self supply. All face strong commercial pressure to purchase MCT (whether directly or through a transit provider). Although originating operators other than BT are not subject to an ex ante condition requiring them to provide end-to-end connectivity, Ofcom has stated that it considers all providers should provide end-to-end connectivity.
- 5.122 To the extent that it is appropriate to consider the impact of dispute resolution on the ability of other purchasers on MCT to exercise CBP, Ofcom considers that this ability to bring a dispute to Ofcom or the threat of doing so is insufficient to constrain MCT charges to the competitive level, for the reasons set out above.

## Section 6

# Impact assessments - Introduction

- 6.1 The analysis presented in sections 6 to 9 below, when read in conjunction with the rest of this document, and with the March 2006 Consultation, represents an impact assessment, as defined in section 7 of the Communications Act 2003 (the Act).
- 6.2 Interested parties should send any comments on this impact assessment to Ofcom by the closing date for this consultation. Ofcom will consider all comments before deciding whether to implement its proposals.
- 6.3 Impact assessments provide a valuable way of assessing different options for regulation and showing why the preferred option was chosen. They form part of best practice policy-making. This is reflected in section 7 of the Act, which means that generally Ofcom has to carry out impact assessments where its proposals would be likely to have a significant effect on businesses or the general public, or when there is a major change in Ofcom's activities. However, as a matter of policy Ofcom is committed to carrying out and publishing impact assessments in relation to the great majority of its policy decisions. For further information about Ofcom's approach to impact assessments, see the guidelines, Better policy-making: Ofcom's approach to impact assessment, which are on the Ofcom website:  
[http://www.ofcom.org.uk/consult/policy\\_making/guidelines.pdf](http://www.ofcom.org.uk/consult/policy_making/guidelines.pdf)

## Ofcom's duties under the Communications Act 2003

### Section 3 – Ofcom's general duties

- 6.4 When considering the appropriateness of the remedies proposed in this section, Ofcom has had regard to its duties under the Communications Act 2003 (the 'Act').
- 6.5 Section 3(1) of the Act sets out the principal duty of Ofcom, in carrying out its functions under the Act:
- to further the interests of citizens in relation to communications matters; and,
  - to further the interests of consumers in relevant markets, where appropriate by promoting competition.
- 6.6 Ofcom has also considered when carrying out its functions, amongst other things, the requirements in section 3(2) of the Act to secure the availability throughout the UK of a wide range of electronic communications services and section 3(4) of the Act, namely that in performing its duties Ofcom must also have regard to such of the following as appears to be relevant in the circumstances, in particular:
- The desirability of promoting competition in relevant markets;
  - The desirability of promoting and facilitating the development and use of effective forms of regulation;
  - The desirability of encouraging investment and innovation in relevant markets; and

- The opinions of customers in relevant markets and of members of the public generally.

#### **Section 4 – European Community requirements for regulation**

6.7 Section 4 of the Act requires Ofcom to act in accordance with the six European Community requirements for regulation. In summary these requirements are to:

- Promote competition in the provision of electronic communications networks and services, associated facilities and the supply of directories;
- Contribute to the development of the European internal market;
- Promote the interests of all persons who are citizens of the European Union;
- Take account of the desirability of carrying out Ofcom’s functions in a manner which, so far as is practicable, does not favour one form of or means of providing electronic communications networks or services, i.e. to be technologically neutral;
- Encourage the provision of network access and service interoperability for the purpose of securing:
  - Efficient and sustainable competition; and
  - The maximum benefit for customers of Communications providers; and

Encourage compliance with certain standards in order to facilitate service interoperability and secure freedom of choice for the customers of communications providers.

6.8 In regard to Ofcom’s proposals outlined in the present document, Ofcom has considered its duties in those sections, as set out below.

#### **Ofcom’s objectives in this review**

6.9 Ofcom considers that there are a number of relevant considerations to be borne in mind when deciding on appropriate remedies for SMP in this market, including, amongst others, the following:

- seeking to promote the interests of consumers by ensuring prices are not excessive and resources are efficiently allocated;
- ensuring technological neutrality and avoiding regulatory distortion of MNO decisions about delivery of mobile termination – seeking to ensure MNOs’ incentives to use one technology (for example, 2G) over another (for example, 3G) are not distorted by regulation;
- encouraging investment and innovation in existing and new mobile services – seeking to ensure operators recover efficiently incurred costs; and
- ensuring competitive neutrality and avoiding economic distortions, for example in the downstream retail market

## The option presented in this consultation document

- 6.10 In Section 7, Ofcom has assessed the detriment likely to arise from the exercise of SMP in the absence of ex ante regulation. Ofcom concludes from this analysis that the option to “do nothing” is not appropriate. (The inadequacy of an ex post competition law approach is explored in paragraphs 8.13 to 8.18 below.)
- 6.11 Ofcom has also taken into consideration the ERG common position on the approach to appropriate remedies in the new regulatory framework<sup>46</sup> (“Revised ERG common position on remedies”). The ERG sets out that in the case of termination markets the following remedies should be considered:
- Obligation to interconnect
  - Transparency;
  - Non-discrimination; and
  - Price control and cost accounting<sup>47</sup>
- 6.12 In Section 8, Ofcom has revisited a number of different options for addressing the identified detriments, including the possibility of technical intervention, a reliance on charge transparency obligations, retail tying, obligations requiring that charges are “fair and reasonable” or cost oriented, and charge controls. These options were explored extensively in the March 2006 Consultation and, having considered responses Ofcom is proposing that charge controls should be imposed.
- 6.13 In the March 2006 Consultation, Ofcom also proposed additional conditions including transparency conditions, a prohibition of undue discrimination and an obligation to meet reasonable demand for MCT on fair and reasonable terms. Having considered responses to the March 2006 consultation Ofcom has also set out in Section 8 a firm proposal that it should impose such conditions as charge control conditions alone will not be sufficient to remedy the identified detriment.
- 6.14 Ofcom is, therefore, proposing a single option to impose charge controls and further conditions requiring transparency of charges and contract terms, prohibiting undue discrimination and requiring the provision of MCT on fair and reasonable terms. In Section 9, Ofcom presents a number of options for determining the appropriate level of charges in each of the four years of the charge control, and Ofcom proposes to determine those levels following consideration of responses.
- 6.15 Ofcom has attached at Annex 21 Notifications of its proposed market definition, SMP finding and draft SMP conditions which are intended to implement the proposed charge controls and further conditions considered in Sections 8 and 9.

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<sup>46</sup> Revised ERG Common Position on the approach to appropriate remedies in the ECNS regulatory framework. ([http://www.erg.eu.int/doc/meeting/erg\\_06\\_33\\_remedies\\_common\\_position\\_june\\_06.pdf](http://www.erg.eu.int/doc/meeting/erg_06_33_remedies_common_position_june_06.pdf))

<sup>47</sup> The ERG also notes that an accounting separation obligation may also be required in particular to assist in the estimation of costs. However, Ofcom does not consider that it requires an accounting separation obligation in order to estimate costs. Ofcom has undertaken detailed cost modelling in order to estimate the costs of termination set out in Annex 5.

## Section 7

# Impact Assessment: Part 1- Benefits of regulation vs no regulation

## Introduction

- 7.1 As discussed in Section 4 above, Ofcom considers that the MNOs have SMP in supplying MCT. Ofcom believes that absent regulation (or the threat of regulation) MNOs would have the ability and incentive to set excessive charges for MCT. Ofcom considers that excessive charges result in detrimental impacts on consumers and, therefore, given Ofcom's objective to promote the interests of consumers, regulation of MCT is required.
- 7.2 In this first section of the regulatory impact assessment, Ofcom considers the detrimental impact on consumers that is likely to result in the absence of regulation (or the threat of regulation) of MCT, and the benefits of regulation which ameliorates these detriments and realises gains for consumers.
- 7.3 In Sections 8 and 9, the detailed options for regulation are assessed in the context of the objective of realising gains for consumers. This consideration assumes that regulation (in whatever form) constrains MNOs' behaviour such that charges are not excessive.
- 7.4 It is important to note the counterfactual against which the benefits of regulation are measured is a situation where no regulation or threat of regulation exists. This is largely a hypothetical situation because, with the exception of MCT supplied by H3G and 3G MCT supplied by 2G/3G MNOs, MCT is currently regulated and has been regulated for a number of years.
- 7.5 The following paragraphs consider the detrimental impact of excessive CTM charges, which can, broadly, be summarised as follows;
- Excessive prices; to the extent that the "waterbed" effect is not complete, the excess profit on termination is not fully competed away in competition for mobile consumers so that, overall, MNOs may generate excess profits and consumers pay too much for inbound call services.
  - Even if the "waterbed" effect is complete and MNOs do not retain excess profits, the resulting structure of prices is inefficient. This inefficiency would lead to over consumption of mobile network services and under consumption of fixed network services. Consumers would face too high a price for calling a mobile and other fixed network services whilst mobile services would be priced too cheaply. Rectifying this inefficient structure of prices brings welfare benefits to consumers.
  - A related factor is that if MNOs set excessive prices for mobile termination whilst FNOs are only able to charge regulated (cost orientated) prices for fixed termination, this would result in a transfer of rents from fixed to mobile operators. This transfer is not an efficient allocation of resources and, in a situation where fixed and mobile operators may begin to compete with each other, could result in a competitive distortion with mobile prices being subsidised at the expense of fixed operators.

- Under the “waterbed” effect, excessive prices result in transfers between different types of consumers. This raises equity concerns. There will be groups of consumers who pay excessive prices for calling a mobile and other fixed network services but who do not benefit from cheaper (subsidised) mobile network services and mobile phones. There will also be transfers within the group of mobile users, some of whom may benefit, or lose, disproportionately from those subsidised services and handsets
- Setting excessive prices may increase the risk of other anticompetitive behaviour such as undue discrimination.

7.6 Many of these concerns are closely inter-related and, in the following paragraphs, Ofcom considers these under five headings;

- Excessive prices overall
- Inefficient structure of prices
- Distortion of consumer choice
- Inequitable distributional effects
- Risk of anti competitive behaviour

### **Excessive prices overall**

7.7 If MNOs set excessive prices for MCT they may be able to earn excess profits at the expense of consumers, as discussed below. It has been argued by the MNOs that Ofcom should not be concerned if mobile termination charges are set above the competitive level if the “waterbed effect” is complete. This is because excess profits arising as a result of excessive termination charges will be returned to mobile consumers in the form of lower retail prices for mobile services. Therefore whilst MNOs make excess profits from termination they will not make excess profits overall across their whole business. In responding to the March 2006 Consultation, O2, T-Mobile and Vodafone each argued that retail competition is such that the waterbed effect is complete, and T-Mobile also expressed the view that the UK mobile market is the least concentrated in Europe. In addition, T-Mobile presented data to support its view that the UK mobile industry is not making its cost of capital, and that average ARPU and EBITDA have fallen (in the fourth quarter of 2005).

7.8 Ofcom’s high level analysis of MNOs’ profitability, set out in paragraphs 2.22 to 2.27 above, illustrates that estimating profitability robustly is complicated and sensitive to assumptions made about the relevant capital base and the time horizon over which profitability is assessed. Under different assumptions Ofcom has found MNOs could be considered to be earning returns variously in excess of and below their cost of capital. In Ofcom’s view the evidence does not confirm whether or not the waterbed effect is complete.

7.9 However, with regard to the presence of excess profits, Ofcom considers that for all excess profits earned from MCT to be competed away, the mobile retail (access and origination) market in which MNOs operate would need to be sufficiently competitive. Ofcom notes that although no MNO has been found to have SMP in the retail market

for mobile services<sup>48</sup>, conditions may not be such as to ensure that the MNOs would always compete away any excessive profits earned in supplying MCT by offering lower prices for retail mobile services.

- 7.10 As Ofcom noted in the March 2006 Consultation, SMP is a threshold for assessing a firm's market power in relation to ex ante regulation. Consequently, there is a wide range of firm behaviours and outcomes consistent with finding that none of the firms in a market have SMP. Ofcom maintains, therefore, that full pass-through of termination profits to retail customers is not a necessary consequence of the finding that no MNO has SMP in the mobile access and call origination market. T-Mobile, in responding to the March 2006 Consultation, argued that Ofcom's remarks indicated discomfort with the SMP threshold for regulation. In Ofcom's view, however, although the SMP threshold is an appropriate threshold for assessing the need, or otherwise, for ex ante regulation, it is, indeed, only a threshold. Ofcom considers that it is still possible for firms to earn excess returns (i.e. returns above their cost of capital) in markets where no firms have SMP because these firms may still experience a degree of market power. However, the degree of market power experienced is not sufficient to be characterised as SMP and therefore warrant ex ante regulation in its own right.
- 7.11 Ofcom acknowledges, however, that the retail market has become more competitive in recent years (and has seen the entry of a fifth MNO) and it has become less likely that MNOs will be able to retain excess profits earned in supplying termination services. However, the way in which profits are competed away is also relevant. If excess profits are used to lower mobile retail prices this will benefit consumers directly. However, if they are used for example to increase expenditure on marketing then this may have a less direct benefit for consumers. Nevertheless, Ofcom remains of the view that, in a market with a limited number of network competitors, complicated retail tariffs, low concentration notwithstanding, and significant entry barriers (due to factors including the high level of sunk costs involved in entry and the historic scarcity of spectrum), it is unlikely that the waterbed effect will be complete.
- 7.12 Furthermore, if the waterbed effect were complete, MNOs' profits would be invariant to the level of termination charges and MNOs would in theory be unconcerned about the level of such charges. In fact, as Ofcom noted in the March 2006 Consultation, it is apparent that MNOs are far from indifferent about the level of their own termination charge which, Ofcom proposes, may indicate that the "waterbed effect" is not complete. For example T-Mobile's response to the March 2006 Consultation indicated a concern that stringent regulation of MCT charges may contribute to MNOs failing to earn their cost of capital – an explicit concern over the level of termination charges.
- 7.13 In responding to the March 2006 Consultation Vodafone argued that MNOs are concerned about the relative levels of termination charges, as these may create competitive distortions. As Vodafone noted, Ofcom is strongly aware of this risk of retail distortions arising from the ability of some MNOs to set MCT charges without facing the constraint of charge regulation.
- 7.14 Ofcom recognises that the relative levels (between MNOs) of regulated MCT charges are important. If certain MNOs are able to earn greater excess profits than others (by charging a relatively higher margin over the cost of MCT than others) this has a

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<sup>48</sup> See Oftel's consideration of the retail market for outbound mobile services contained within its assessment of the market for wholesale mobile outbound services; Oftel statement *Mobile access and call origination services market review* – published August 2003.

potential to create a competitive distortion in the retail market to the detriment of consumers. This is discussed in further detail in Section 9 below where Ofcom discusses the appropriate level of charge controls to apply to each of the MNOs.

### Inefficient structure of prices

- 7.15 In Ofcom's view, however, even if MNOs do not make excess profits from setting excessive termination charges, the resulting structure of prices in retail and wholesale markets is inefficient and has a detrimental impact on consumers. This is because MNOs do not have the incentives to set efficient prices as the competitive conditions (as discussed in paragraph 3.120) between MCT and other mobile retail services are different.
- 7.16 If MNOs set excessive charges for MCT, even if they do not earn excessive profits overall, a structure of prices will result that is inefficient. The inefficient structure of prices would lead to over consumption of mobile retail services and under consumption of other retail services that use MCT, such as fixed retail services. Consumers would face too high a price for calling a mobile and potentially too high a price for other fixed retail services (whilst mobile retail services would be priced too cheaply).
- 7.17 In its response to the March 2006 Consultation, T-Mobile argued that, in determining regulated charges, unless Ofcom followed Ramsey principles to achieve the efficient structure of charges then regulation to set a more efficient structure of prices would not be effective. Issues of charge setting are dealt with in Section 9. Ofcom recognises that the interaction of related demand and externalities are important considerations in determining appropriate charges.
- 7.18 Ofcom set out in the March 2006 Consultation evidence that approximately two thirds of cost savings generated for providers of fixed to mobile calls as a consequence of MCT charge reductions, had been passed through directly to lower fixed to mobile retail call charges. In noting this finding, T-Mobile and Vodafone both argued that these levels of direct pass-through indicate that the objective of addressing inefficient price structures is not being achieved by wholesale charge regulation, calling into question the value of such charge regulation. Ofcom does not agree with this conclusion.
- 7.19 In Ofcom's view, reductions in termination charges may be used by fixed network operators to reduce prices of other fixed network services such as line rental, local and national calls, and broadband and television services. From a consumer welfare perspective this could be more efficient than the full reduction being passed through directly to fixed-to-mobile calls. Therefore, the observation that fixed network operators have not passed on the full reduction in wholesale termination charges directly to fixed-to-mobile calls is not a significant concern. The issue is whether fixed network operators have the incentive to set an efficient structure of prices for fixed network prices which depends on the competitive conditions. Ofcom has found that no fixed operator, other than BT, has SMP in the fixed retail market and Ofcom's recent review of BT's retail price controls<sup>49</sup> suggests that competition in the fixed retail market is likely to increase going forward.
- 7.20 T-Mobile argued in its response to the March 2006 Consultation that Ofcom's view, set out in the March 2006 Consultation, that pass-through of savings made on MCT charges would be efficiently distributed across a broad basket of fixed services

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<sup>49</sup> See <http://www.ofcom.org.uk/consult/condocs/retail/>

according to Ramsey principles, is incorrect. T-Mobile argued that under Ramsey principles a relatively larger reduction in retail prices of calls to mobile would be expected given a reduction in the marginal cost of calling a mobile, and that this was not being experienced in practice. Ofcom considers that T-Mobile's argument holds only under the strict assumption that the elasticity of demand for fixed to mobile calls is constant at all prices. In Ofcom's view this is an extreme assumption and it is more likely that elasticity of demand is not constant, which is consistent with Ofcom's view of pass-through.

- 7.21 Ofcom has estimated the welfare gains from regulating call termination by comparing a situation with unregulated (excessive) and regulated (cost based) termination charges. The analysis captures the interrelationship between demand for calls to mobiles and for mobile retail services. If the welfare gain from regulation was assessed only in the light of the impact on calls to mobiles this would overstate the overall welfare gain because, as discussed earlier, MNOs use profits from termination to reduce the prices of retail mobile services. This benefits mobile subscribers and potentially trades off against the detriment to callers of excessive charges.
- 7.22 The analysis compares an unregulated termination charge of 24.2 ppm based on Ofcom's estimate of the monopoly termination charge and a regulated termination charge of 5.4 ppm based on the weighted average (by termination volumes) of Ofcom's proposals for charges set out in Section 9. The full set of assumptions that have been employed in this welfare analysis are set out in Annex 19.
- 7.23 The welfare analysis estimates the change in consumption of calls to mobiles and mobile retail services following a move (via regulation) to a more efficient price structure. The welfare gain amounts to £1.4 billion in 2010/11 and over four years of a hypothetical charge control assuming a smooth glidepath down to the target charge from the monopoly charge amounts to approximately £3.3 billion in present value terms at the beginning of 2007/08. Ofcom acknowledges that this is an order of magnitude estimate and not a precise estimate of the overall gains from regulation compared to no regulation (or threat of regulation).
- 7.24 In their response to the March 2006 Consultation, T-Mobile and Vodafone both commented that the economic efficiency gains from regulation are smaller than estimated by Ofcom. However, the view relates to movements from current (regulated) charges to different (lower) regulated charges. This does not mean, as is argued by T-Mobile, that the welfare gains from regulation compared to no regulation (or threat of regulation) are small, rather that small changes in the regulated termination charge do not have as large impacts on welfare.

### **Distortion of consumer choice**

- 7.25 To the extent that direct pass-through operates, excessive termination charges feed through into higher retail prices for fixed to mobile and mobile to mobile (off-net) calls. However, mobile to mobile (on-net) calls incur no explicit termination charge, and mobile to fixed calls face a regulated fixed termination charge as part of their cost base. Moreover, excessive MCT charges enable reductions in prices of mobile retail services. Therefore, Ofcom considers that consumers' choices will be distorted between mobile and fixed calling due to distortions in the relative prices of fixed and mobile services, as the relative prices do not reflect the underlying resource costs. Consumers are potentially driven to use the higher resource cost mobile technology (higher cost because mobile networks involve higher usage-dependent costs

compared to fixed networks) and this is inefficient and may be detrimental to consumers.

- 7.26 In particular, while fixed termination charges are regulated at cost<sup>50</sup>, excessive mobile termination charges amount to a transfer of rents from fixed to mobile operators. This is not an efficient allocation of resources and, in a situation where fixed and mobile operators may compete with each other more closely, could result in a competitive distortion with mobile retail prices subsidised at the expense of fixed operators. As Ofcom discussed in the last calls to mobile market review, Ofcom does not consider that it would be sensible to promote competition between mobile and fixed operators by providing MNOs with a more favourable regulatory treatment. Ofcom considers that sustainable competition between mobile and fixed operators should be driven by the underlying costs of the technologies, facilitated by a neutral regulatory environment consistent with Ofcom's duties under Section 4(6) of the Act. There would be serious doubts as to the sustainability of competition between mobile and fixed operators if it were underwritten by excessive pricing of mobile termination services at the expense of fixed operators and callers to mobiles.
- 7.27 T-Mobile argues that this view is heavily focused on static efficiency gains. In its view, if a dynamic long run efficiency perspective is considered, Ofcom should note that mobile networks represent the key means by which BT's control over the local loop bottleneck can be overcome. Ofcom considers that MNOs may in the future prove to be a strong competitor to BT in providing access to consumers in their homes. However, as discussed, it is not efficient for this competition to be based on excessive charges for MCT.

### **Inequitable distributional effects**

- 7.28 As Ofcom noted in the March 2006 Consultation, as mobile termination charges are a major component of the price of calls to mobiles, if the former are excessive, callers to mobiles can face an excessive price for fixed-to-mobile and mobile off-net calls, and, given some level of pass-through (via the 'waterbed' effect), lower prices for other retail mobile services. Therefore callers to mobiles may face excessive charges while mobile subscribers may benefit through lower prices for mobile services. Different consumers will face a different distribution of these benefits. At a high level there are three categories of consumers to which these distributional benefits are important (date based on Quarter 4 2005 data from Ofcom's Residential Tracker Survey):
- Fixed only consumers i.e. those not personally using mobile phones and living in households with fixed line phones. This group accounts for approximately one in ten (9%) of adults;
  - Mobile only consumers i.e. those personally using a mobile and living in a household without a fixed line phone. This group accounts for approximately one in ten (10%) of adults; and
  - Mobile and fixed consumers i.e. those who have been found to use mobile phones and live in household with fixed line phones. This group accounts for approximately four-fifths (80%) of adults.
- 7.29 Fixed only consumers are adversely affected by the negative impact of excessive termination charges. However, the proportion of fixed only consumers is declining

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<sup>50</sup> See [http://www.ofcom.org.uk/static/archive/oftel/publications/eu\\_directives/2003/cal\\_term0803.pdf](http://www.ofcom.org.uk/static/archive/oftel/publications/eu_directives/2003/cal_term0803.pdf)

and is now slightly smaller than the number of mobile only users. Ofcom's January 2006 survey (see paragraph 3.19 above) also suggests that many fixed only consumers are not frequent callers of mobiles; for example, only 7% of this group reported calling a mobile daily (compared with 34% of consumers with both a fixed and a mobile phone).

- 7.30 Other types of consumers face a tradeoff, higher prices for calling a mobile compared to lower prices for mobile services. Within the population of mobile users ("mobile-only" and "mobile and fixed"), it is highly likely that some consumers will be adversely affected by high termination charges; this will depend on the extent to which they consume calls to mobiles relative to other services. For example those who frequently change their (subsidised) mobile phone and also make few fixed to mobile calls are more likely to benefit from subsidies to customer acquisition and retention than those who do not change their handset from year to year and are frequent callers from fixed to mobile phones.
- 7.31 Given the existence of SMP, the difference between the cost of MCT and the wholesale charge in the absence of any intervention (or the threat thereof) is likely to be large. The transfers between different sets of customers are unlikely to be 'undone' by compensation from those made better off to those worse off. Ofcom therefore believes that distributional factors should legitimately be taken into account in the decision as to whether there is a justification for regulation of termination charges, as an adjunct to the basic efficiency rationale, set out in the previous section.
- 7.32 In responding to the March 2006 Consultation, T-Mobile, O2 and Vodafone each noted Ofcom's finding that there are now roughly the same number of mobile-only households as fixed-only households, and took from this that any distributional concerns that excessive MCT charges are detrimental to fixed-only households are of less importance than hitherto. Vodafone draw similar conclusions from Ofcom's observation that fixed-only households are not particularly frequent callers of mobiles.
- 7.33 T-Mobile presented further data and analysis of its own relating to the incomes of fixed-only and mobile-only households. This indicated that mobile-only households are also, broadly, less prosperous than fixed-only households. T-Mobile took from this finding that, as it is the poorer and marginally more numerous group (mobile-only households) which benefits from relatively high MCT charges, any reduction in these charges would not have a positive redistributive effect.
- 7.34 Ofcom acknowledged in Section 5 of the March 2006 Consultation that the demographics of fixed and mobile users had changed, and Ofcom recognises that there is no longer a clear argument that lower MCT charges particularly benefit disadvantaged groups. However, as noted in that Section 5, it remains the case that excessive MCT charges which are used to subsidize particular retail mobile services (while increasing the cost base of providers of fixed network services) are disadvantageous to certain groups of consumers (defined by their relative levels of spending on the affected services). To the extent that this disadvantage arises from the exercise of SMP, rather than an economically efficient structure of prices, it remains Ofcom's view that the overall effect is likely to be detrimental to consumer welfare.

## Risk of anti-competitive behaviour

- 7.35 The ability to set excessive charges for MCT enjoyed by the MNOs could also be used to distort and reduce competition in retail mobile markets. Each MNO is a monopolist in the provision of termination services to originating operators for calls to that MNO's subscribers. These services are an input into retail products sold by the MNO and competitors in both outgoing and access market and other retail markets. Hence, an MNO may be able to exploit its position in the termination market to impair its rivals' ability to compete for customers. Similar concerns may also arise in respect of anti-competitive behaviour towards fixed network operators where these are close competitors. The greater the gap between wholesale price and cost, the greater the risk that certain types of behaviour e.g. discrimination, would have an anti-competitive effect in retail markets.
- 7.36 Where all MNOs are of similar size in terms of revenues or subscribers, they may have similar levels of market power in the retail mobile market. This issue is less likely to be of concern, because, with the entry of H3G and possible future entry associated with the liberalisation of spectrum, there is potential for anti-competitive pricing by larger MNOs to the detriment of smaller MNOs and therefore competition.
- 7.37 In particular, the larger MNOs could charge higher termination charges to smaller MNOs than they charge to each other. A new entrant, given its asymmetric position in the retail market with respect to the incumbent MNOs could find itself at a significant disadvantage in offering retail access and outgoing call services if, for example, its incoming and outgoing traffic were not balanced. Ofcom therefore believes that the competitive distortions that may arise if MNOs were free to exploit their SMP in the market for mobile voice termination should also be considered in the decision whether to regulate.
- 7.38 However, Ofcom notes that if an MNO (such as a small new entrant) is unable to negotiate reasonable terms for mobile call termination (or is unable to establish direct interconnection), it may instead seek to use another operator (such as BT) to transit the call to the relevant mobile network. The call will then be terminated under the terms of that transit operator's mobile termination agreement. BT offers such services and, therefore, the termination rate paid by BT to the other MNOs effectively acts as a ceiling on the maximum charge any new entrant would have to pay. As T-Mobile argued in its response to the March 2006 Consultation, a concern such as this does not necessitate charge controls but rather could be addressed with an obligation to prevent undue discrimination. Regulatory remedies are discussed in the next part of the impact assessment.
- 7.39 In its response to the March 2006 Consultation, T-Mobile presented reasons why this issue does not justify regulation. In particular they argued that if excessive termination charges lead to lower mobile prices and greater competition with BT and other fixed operators this should be welcomed given BT's SMP in the fixed retail market. However, as discussed earlier, in relation to the distortion of consumer choice, Ofcom does not consider that competitive distortions between fixed and mobile operators due to asymmetric regulation should be encouraged as T-Mobile suggest. Competition promoted by excessive pricing is not an efficient form of competition.
- 7.40 A final issue raised by T-Mobile was the consideration that it is regulation itself that is currently distorting the competitive process by allowing H3G to set termination charges almost double those of the other MNOs. It argues that H3G is using higher termination charges to undercut the retail prices of the other operators and grow its

customer base, regardless of relative efficiency. This last point is not related to Ofcom's general analysis of detriments in this section but to the current asymmetric regulation of mobile termination across MNOs. As discussed earlier in this section Ofcom is considering the relative position of MNOs and appropriate remedies in the course of this review. The current asymmetric regulation of H3G is not a sound reason for Ofcom to refrain from regulating any MNOs, and Ofcom is not proposing to adopt that approach.

## Summary

- 7.41 In summary it is Ofcom's view that, while the waterbed effect is likely to operate to a material extent, some excessive profits generated by MCT charges may be retained by MNOs at the expense of consumers paying excessive prices, since the mobile retail market may not be sufficiently competitive for all excess profits to be competed away. Furthermore, in Ofcom's view it is important to note that even if the waterbed was fully effective, the resulting structure of prices in retail and wholesale markets would be inefficient and would have a detrimental impact on consumers, which would warrant regulatory action.
- 7.42 The level of MCT charges has an impact on prices, and consumption, of a wider range of fixed network retail services, and, more broadly, on the relative extent to which fixed and mobile networks are used and developed. In Ofcom's view, the importance of this issue is likely to continue to grow as fixed and mobile services continue to converge.
- 7.43 Ofcom also recognises that demographic changes are such that concerns expressed in previous reviews of this market, that low income groups may be particularly disadvantaged by high MCT charges, are now less relevant. As such, as T-Mobile noted in its response to the March 2006 Consultation, where additional weight has been placed on the need to address social disadvantage, the distributive benefits arising from reductions on MCT charges may be lower than hitherto. It remains the case, however, as noted in 7.34 above, that certain groups (defined by their telecoms consumption patterns rather than their broader demographic identity) are materially disadvantaged by the inefficient structure of prices arising from certain retail mobile services being subsidised by excessive MCT charges.
- 7.44 For the reasons cited in paragraphs 7.35 to 7.41, it also remains Ofcom's view that the risk of anti competitive behaviour increases in the presence of excessive MCT charges. In particular, Ofcom acknowledges that charge controls are not the primary means to address such behaviour. A concern that MNOs may discriminate between different purchasers of MCT may be remedied with an undue discrimination obligation. However, to the extent that a reduction in MCT charges lessens this risk, this does represent a further benefit to be derived from charge controls.







































































































































































































































































































































































































