Amendment to charge control on Mobile Network Operators

Proposals for consultation

Consultation

Publication date:	27 March 2007
Closing Date for Responses:	5 June 2007

Contents

Section 1

Summary

1.1 Today, Ofcom has published its statement *Mobile call termination – Statement*[1] (the "Statement") in which it has determined that the five Mobile Network Operators (the MNOs), Vodafone, T-Mobile, O2, Orange and Hutchison 3G UK each have Significant Market Power (SMP) in the market for termination of voice calls on their respective networks. Ofcom has, as a result of these determinations, imposed relevant regulatory obligations on all five MNOs including a wholesale charge control. These charge controls only apply to traffic for which the MNO in question sets the termination charge (and thus currently exclude ported-in minutes – see below).

1.2 This consultation concerns a proposed modification to those charge controls on the five MNOs. As part of the responses to the consultation that led to the Statement, Ofcom received representations relating to the impact of indirect routing for mobile number portability on the effective termination charge (i.e. an MNO's average termination charge, taking into account revenue from termination on ported-in numbers as well as from directly routed minutes). As Ofcom explained in the Statement, (at paragraphs 9.229 – 9.235) this consultation document responds to the concerns that have been raised.

1.3 Present mobile number portability (MNP) arrangements in the UK involve indirect routing of calls to ported-in numbers. When a call is terminated on a number ported-in from another MNO, the originating operator (fixed or mobile) pays for termination at the rate set by the donor MNO (where the donor operator is the MNO to whom the number was originally assigned). The recipient network therefore receives the donor's termination charge rather than its own. However, the termination rate(s) that an MNO receives on ported-in minutes is not taken into account in assessing its compliance with the charge controls set out in the Statement. Direct routing of calls to ported-in numbers would mean this issue would not arise as each MNO would receive its own termination rate regardless of whether the number called has been ported-in.

1.4 The arrangements for number portability in the UK (both fixed and mobile) are the subject of a separate consultation "Review of general condition 18 – number portability" published in November 2006[2] (the "November Consultation"). That consultation also outlined proposals in relation to mobile port lead times.

1.5 The consultation document on number portability set out a number of different options for consideration including a proposal that the telecoms industry (fixed and mobile) could introduce direct routing arrangements using an All Call Query/Common Database (ACQ/CDB). Ofcom plans to publish its follow up to the November Consultation later this year. The financial impacts of the current charging arrangements for calls to ported-in numbers will continue unless and until direct routing (or other suitable) arrangements are put in place. Ofcom cannot determine yet when this might be, not least because this matter is still the subject of consideration following the now closed consultation.

1.6 The disadvantage of the existing charging mechanism for calls to ported-in numbers is that, for as long as the current charging and routing arrangements for calls to

---

[1] http://www.ofcom.org.uk/consult/condocs/mobile_call_term/statement/
[2] http://www.ofcom.org.uk/consult/condocs/gc18/gc18r.pdf

ported-in numbers apply, the MNOs will receive an average effective termination rate (i.e. taking into account both ported-in minutes and directly routed minutes) that differs from (i.e. could be higher or lower than) the ceiling for wholesale termination charges set by Ofcom in the Statement.

1.7 Further, because of these arrangements, and their interaction with the charge controls, there is the potential for distortions to: (i) the incentive to encourage subscribers to switch from one network to another; and (ii) the incentive to encourage subscribers that do switch to port/change their number.

1.8 Ofcom considers that it would be appropriate to propose modifying the charge controls to take account of these disadvantages, and therefore, in this consultation document, identifies four potential options it could consider. They are:

- Option 1: Do nothing;
- Option 2: Seek a self regulated inter-operator financial settlement system with respect to mobile termination revenues;
- Option 3: Change the level of the charge controls applicable to each of the five MNOs; or
- Option 4: Modify the mechanics of the charge control applicable to each of the five MNOs.

1.9 Ofcom's preferred approach is Option 4; the amendment to the charge control, as in Ofcom's view it is the most appropriate option to address the disadvantages of the existing charging arrangements (as outlined above) for ported-in numbers. In particular, by adjusting the charge control so that the average effective termination rate aligns with the levels of the charge control set out in the Statement, it improves the accuracy and effectiveness of the charge control in this respect. Ofcom considers in detail the advantages and disadvantages of each approach in Section 4 of this document.

1.10 This document sets out the rationale for the proposed modification to SMP services conditions MA3 and MA4 set by the Statement, the charge controls imposed on each of the five MNOs. This document includes a full regulatory impact assessment.

Section 2

Introduction

2.1 This section briefly describes the background to this consultation document including the *Mobile call termination – Statement* (the "Statement") published today, the indirect nature of the routing system for calls to ported-in mobile numbers, the impact this system has on the monies received by the MNOs and the impact on the effective termination charge earned by an MNO (i.e. its average termination charge taking into account revenue from termination on ported-in numbers as well as from directly routed minutes).

2.2 Wholesale mobile voice call termination (MCT) is the service necessary for a network operator (fixed or mobile) to connect a caller with the intended mobile recipient of a call on a different mobile 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.

2.3 In the Statement, Ofcom has set out its conclusions of its review of the markets for supply of MCT, including its conclusions on market definition, the existence of Significant Market Power (SMP), the detriments likely to arise from the exercise of that SMP and the remedies which should be imposed on each of the five MNOs.

Background

2.4 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 Hutchinson 3G UK[3] (together, "the five MNOs") as having SMP[4]. 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"). The charge controls imposed on the 2G/3G MNOs will expire on 31 March 2007.

2.5 A new 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.

2.6 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 indicated that each of these mobile operators has SMP in the market in which they supply MCT.

2.7 The March 2006 Consultation also considered the detriments which may arise from the exercise of SMP in these markets, and explored a number of regulatory options

[3] Hutchison 3G UK ("H3G") subsequently appealed its SMP designation and the Competition Appeal Tribunal ("CAT") remitted the decision back to Ofcom to reconsider. Ofcom is publishing separately today the conclusions of its reassessment of H3G's SMP during the period to 31 March 2007.
[4] A sixth operator, Inquam, was also judged to have SMP but no longer provides MCT.

for addressing those detriments. Ofcom indicated an initial view that, in the presence of SMP, some form of charge control might be appropriate.

2.8 On 13 September 2006, having considered responses to the March 2006 Consultation, Ofcom published a third consultation *Mobile call termination – Proposals for consultation* (the "September 2006 Consultation"). In the September 2006 Consultation, Ofcom set out its view that there are separate markets for MCT supplied by each of the five MNOs and each of these mobile operators has SMP in the market in which they supply MCT. The September 2006 Consultation also set out Ofcom's view of the detriments which are likely to arise from the exercise of that SMP, and the remedies which Ofcom proposed should be imposed. These remedies included charge controls to apply to each of the five MNOs for four years to 31 March 2011, obligations to meet reasonable demand for MCT on fair and reasonable terms, prohibitions of undue discrimination and obligations concerning transparency of charges and contract terms.

2.9 Responses were received from BT, C&W, Vodafone, O2, Orange, T-Mobile, H3G, Mr Alan Horne, and 3 others who wished to remain anonymous.

Ofcom's conclusions

2.10 Having considered responses to the September 2006 Consultation, Ofcom has set out in the Statement its conclusions that:

- There are separate markets for the provision of wholesale mobile voice call termination in the UK to other Communications Providers by each of Vodafone, O2, Orange, T-Mobile and H3G.

- 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 1 April 2007.

- Average charges of Vodafone, O2, Orange and T-Mobile should be reduced to 5.1 ppm (2006/7 prices) by the final year of the charge control period (1 April 2010 to 31 March 2011). The reduction should be implemented in 4 equal (percentage) steps across the four years.

- Average charges of H3G should be reduced to 5.9 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 an initial reduction to 8.5ppm (2006/7 prices) followed by three reductions each of equal (percentage) change across the next three years (i.e. from April 2008 to March 2011).

- In these particular markets, Ofcom would normally give around 60 days notice of regulatory charge reductions. As existing MCT charge controls expire less than one week after publication of the Statement, such notice cannot be given on this occasion without a break between the old and new controls (which Ofcom does not consider appropriate). To address this procedural concern, Ofcom has decided, therefore, to impose new controls from 1 April 2007 but to adjust the level of the year-one (1 April 2007 to 31 March 2008) controls by weighting them as though they applied for only 10 of the 12 months of the year one control and as though for two of the 12 months the present average charges applied. This adjustment increases H3G's year one control level to 8.9ppm (2006/7 prices). The impact on the year one control level for the 2G/3G MNOs is less than 0.1ppm.

- 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 transparency. Ofcom has concluded, however, that the proposed obligation to publish contracts is not proportionate.

2.11 Following the Statement, Ofcom now wishes to consult on a modification to the charge control which would take account of the financial impact of MNP on the MNOs' average termination revenues.

Mobile number portability arrangements

2.12 Number portability is a facility that enables subscribers, who so request, to be able to retain their telephone number(s) when they change from one provider to another provider. Number portability thereby assists consumer choice and effective competition. This makes switching a more attractive proposition as consumers may be reluctant to switch if they have to go through the inconvenience and possible expense of changing their telephone number.

2.13 Current UK MNP arrangements involve indirect routing of calls to ported-in numbers. This means that where a call is terminated on a number ported-in from another MNO, the originating operator pays for termination at the rate set by the donor MNO (where the donor operator is the MNO to whom the number was originally assigned). The recipient network therefore receives the donor's termination charge rather than its own (less a Donor Conveyance Charge[5] paid by the recipient network to the donor network).

2.14 In November 2006, Ofcom published a consultation document reviewing General Condition 18 which relates to number portability (both fixed and mobile) (the "November Consultation")[6]. Ofcom is considering the implementation of number portability in the context of the development of Next Generation Networks (NGNs) in the UK.

2.15 BT has announced its 21CN plans, which set out to replace progressively its core network with an architecture based on NGN technology. Many other network operators are either planning or have begun implementation of networks based on NGN designs. This development allows consideration of whether there could be more optimal arrangements for the routing of calls to fixed and mobile numbers.

2.16 The November Consultation also offered the opportunity for Ofcom to consider and review the issue of mobile port lead times. Ofcom is considering whether the current industry agreed five day process should be reduced to a shorter period of time.

[5] This is the charge which, under the current arrangement, is paid by the recipient MNO to the donor MNO for the transit service of routing of the ported call. This charge covers the switching, engineering and transmission costs incurred by the donor MNO in conveying the call to the recipient MNO.

[6] http://www.ofcom.org.uk/consult/condocs/gc18/gc18r.pdf

2.17 Ofcom plans to publish its follow up to the November Consultation later this year. Unless and until new arrangements are established, the current indirect routing arrangements for ported-in mobile numbers have a financial impact for all five MNOs. This impact is set out in more detail in the impact assessment at Section 4.

2.18 Absent any new MNP arrangements, one of the issues raised by respondents to the September 2006 Consultation was the impact on the termination charges received by MNOs under the current charging arrangements for calls to ported-in numbers. Namely that, where the recipient network termination rate is higher than the donor network termination rate, the recipient MNO will receive a lower termination rate on the ported-in numbers relative to its regulated charge. Similarly, an MNO could recover termination charges at a level higher than its regulated charge level where it is receiving the charge with respect to numbers ported-in from a donor network whose termination rate is higher than its own.

2.19 In determining the charge controls specified in the Statement, Ofcom considered a number of potential objectives, including in particular setting economically efficient prices (for example, see paragraphs A14.6 - A14.22 of the Statement). The path of charge controls specified in the Statement constrains the average price that an MNO can charge for directly terminated minutes. However the effective average price that an MNO charges (once ported-in minutes are also taken into account) will differ from the level of the charge control (which only applies to directly terminated minutes). In other words, because of the impact of the current charging arrangements for calls to ported-in numbers an MNO's effective price will differ from the average price level that Ofcom considers to be appropriate. This pricing anomaly also leads to imbalances in MNOs' revenues.

2.20 The overall financial impact of indirect routing for the 2G/3G MNOs (Vodafone, T-Mobile, Orange and O2) varies being roughly neutral for Orange and T-Mobile, but positive for Vodafone and O2. For H3G the impact is negative i.e. it receives less than it would if there were direct routing because it is receiving a lower termination rate than its own termination rate for a significant proportion of its calls. The impact is calculated by taking into account the proportion of minutes for each MNO that are terminated on ported-in numbers.

2.21 The impact on H3G will reduce as H3G's charges, during the charge control period, become more closely aligned with those of the other MNOs, but the effect will remain whilst indirect routing continues.

2.22 Ofcom had considered this issue previously, notably in the June 2004 Statement on the previous charge control[7], and recognised that the arrangement favoured MNOs with lower termination charges than the donor MNO, who received a higher charge on a share of their incoming traffic, with the reverse being true for those with higher termination charges.

2.23 In the consultations preceding the June 2004 Statement, Ofcom expressed the view that the then level of porting of mobile numbers was significant enough to warrant consideration of how ported-in numbers should be treated in the charge controls. Having considered a number of options, in the June 2004 Statement, Ofcom determined that calls to ported-in numbers would be excluded from the charge control (paragraphs 6.47-6.48) as to include them may make it difficult for MNOs to comply with their control.

---

[7] Wholesale Mobile Voice Call Termination – Statement 1 June 2004 – Annex E http://www.ofcom.org.uk/consult/condocs/mobile_call_termination/wmvct/wmvct.pdf

2.24 However, given the comments raised by respondents to the September 2006 Consultation noted above, the fact that since June 2004 the number of ported-in numbers has increased, and that charge control regulation now encompasses H3G, which will have a higher regulated charge at least in the early years of the control, Ofcom believes that the impact of any effects is likely to have increased since 2004, and therefore has decided to reconsider its position on this issue. For example, in December 2003, as part of the consultation process leading up to the June 2004 Statement, Ofcom stated that '*ported mobile numbers are… around 5% of total connections*'[8] Ofcom notes that since December 2003, the percentage of ported-in numbers has risen from 5% to just under 10% today according to internal Ofcom analysis and a recent published report by Analysys consultants;[9] this would indicate that the impact of the current charging arrangements is likely to have increased.

[8] See paragraph J3, available at:
http://www.ofcom.org.uk/consult/condocs/mobile_call_termination/mct_consultation/annexj.pdf
[9] Mobile Number Portability: strategies for operators and regulators, Analysys, January 2007

Section 3

Market definition and SMP

Introduction

3.1 The relevant markets that were defined in the Statement are the separate markets for the provision to other Communications Providers of wholesale mobile voice call termination in the UK by each of Vodafone, O2, Orange, T-Mobile and H3G. This definition includes calls terminated on ported-in numbers.

3.2 In the Statement, Ofcom concluded that each of these MNOs has SMP in the provision to other Communications Providers of wholesale mobile voice call termination in the UK on its own network(s). Ofcom believes there has been no material change in these markets since the September 2006 Consultation and the Statement published simultaneously with this consultation document today.

3.3 Technical arrangements, devised by the industry, for delivering calls to mobile telephones with ported-in 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, around 20%[10] of total mobile terminated minutes are terminated on mobile numbers that have been ported-in 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. The financial impact of the indirect routing arrangements therefore varies between providers.

Modification of existing SMP conditions

3.4 Section 87(1) of the Communications Act 2003 (the 'Act') provides that, where Ofcom has made a determination that a person has SMP in a particular market, it must set such SMP services conditions as it considers appropriate and as are authorised in the Act. This implements Article 8 of the Access and Interconnection Directive.

3.5 The Act (sections 45-50 and 87-92) sets out the obligations that Ofcom can impose if it finds that any undertaking has SMP. In particular, Ofcom can impose charge controls and rules in relation to cost recovery and cost orientation (section 87(9)). On 27 March 2007, Ofcom imposed SMP services conditions on the 5 MNOs.

3.6 Section 86 of the Act prevents Ofcom from modifying an SMP services condition outside of a market review, unless it is satisfied that there has been no material change in the markets identified since the SMP determination was made.

3.7 Since the Statement issued on the same day as this consultation document, Ofcom is not aware of any material changes in the relevant markets and is satisfied that there has been no material change.

3.8 The proposed modifications to the charge controls are at Annex 5. The notification itself is given under sections 48(2) and 86(1) of the Act and sets out Ofcom's proposals for the modification of the charge controls proposed on the five MNOs.

[10] See paragraph 2.32 of the Statement.

Section 4

Options and impact assessment

Introduction

4.1 The analysis presented in paragraphs 4.10 – 4.60 below, when read in conjunction with the rest of this document, represents an impact assessment, as defined in section 7 of the Act.

4.2 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[11].

Ofcom's duties under the Communications Act 2003

Section 3 – Ofcom's general duties

4.3 When considering the appropriateness of the remedies proposed in this section, Ofcom has had regard to its duties under the Act.

4.4 Section 3(1) of the Act sets out the principal duties 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.

4.5 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.

[11] http://www.ofcom.org.uk/consult/policy_making/guidelines.pdf

Section 4 – European Community requirements for regulation

4.6 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.

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

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

- Seeking to promote the interests of consumers by ensuring resources are efficiently allocated;
- Avoiding regulatory distortion of MNO decisions about delivery of mobile termination;
- Seeking to ensure operators recover efficiently incurred costs at the level specified in their charge control; and
- Ensuring competitive neutrality and avoiding economic distortions, for example in the downstream retail market.

4.9 Ofcom sets out below (for example at paragraphs 4.52 to 4.60) how it has taken these considerations into account when formulating its proposal.

Options for consideration

4.10 The charging mechanism for calls to ported-in mobile numbers results in termination charges being applied for calls that may be either above or below the relevant efficient operator charge set by Ofcom for termination for calls to the recipient network. As a result Ofcom has set out four possible approaches that it could consider to take this into account:

- Option 1: Do nothing;
- Option 2: Seek a self regulated inter-operator financial settlement system with respect to mobile termination revenues;
- Option 3: Change the level of the charge controls applicable to each of the five MNOs; and
- Option 4: Modify the mechanics of the charge control applicable to each of the five MNOs.

4.11 Ofcom's preferred approach is Option 4, but the advantages and disadvantages of each approach are discussed in detail below, and Ofcom would welcome comments from Stakeholders.

Option 1: Do nothing

4.12 Under this option the charge controls established in the Statement would remain unchanged. This has the obvious advantage of requiring no further intervention by Ofcom, nor any additional regulatory costs for the industry. However, it would not address the potential for MNOs to receive a higher or lower termination charge relative to the charge controls that Ofcom has specified in the Statement nor the distortion to retail incentives that results from the current charging mechanism. These distortions may intensify as the number of ported-in numbers increases.

Advantages of this option

4.13 Charge controls have been applied to four of the five MNOs for a considerable period of time. These regulated charges have been set at different rates and, due to the mechanism for charging for termination for calls to ported-in numbers, revenue imbalances have been a feature of the charge control system throughout this time.

4.14 As discussed in Section 2, Ofcom had considered this issue previously, notably in the June 2004 Statement on the previous charge control[12]. Ofcom determined at that time that calls to ported-in numbers should be excluded from the charge control.

4.15 Moreover, the problem that has been identified may, in any event, only be temporary. As noted above, indirect routing of calls to mobiles may not occur throughout the whole of the charge control period as direct routing (or other suitable) arrangements may be established at some point during the next charge control period.

4.16 Ofcom recognises that, under the glidepaths set by Ofcom in the Statement, all MNOs to a greater or lesser extent, over–recover relative to their path of costs. It might be argued that an advantage of Option 1 is that, for some MNOs, the existing charge mechanism for calls to ported-in numbers offsets this over–recovery relative to costs. However, Ofcom does not consider this fact relevant to this consultation, nor a valid argument for retaining the existing charging mechanism.

[12] Wholesale Mobile Voice Call Termination – Statement 1 June 2004 – Annex E
http://www.ofcom.org.uk/consult/condocs/mobile_call_termination/wmvct/wmvct.pdf

4.17 Ofcom does not consider any impact of the current charging arrangements for calls to ported-in numbers on over-recovery relative to costs to be an advantage of Option 1 since: (i) that impact only applies to ported-in minutes (and not the 80% (approximately) of terminated minutes that are directly routed); (ii) for ported-in minutes, the donor network's termination rate (i.e. the termination charge currently received on those minutes) is unlikely to reflect the recipient network's cost of termination; and (iii) for some MNOs, particularly the 900/1800MHz operators, over-recovery relative to costs is actually further *increased* by the current charging arrangements for calls to ported-in numbers.

Disadvantages of this option

4.18 The final level of charges and glide path, as specified in the Statement, reflect Ofcom's view on the appropriate path of average charges over the charge control period. The appropriate average charge in any one year of the control period is defined in the Statement as the Target Average Charge (TAC). Currently the charge control only applies to directly routed minutes. Therefore, given the existing charging arrangements for calls to ported-in numbers, all MNOs receive an effective termination rate (i.e. an average rate that takes into account revenue from calls to ported-in numbers as well as those terminated directly) which will differ from their TAC, and thus reduce the effectiveness of the charge controls specified in the Statement in this respect. It could also create adverse impacts on incentives.

4.19 Therefore, a disadvantage of this option is that it reduces the effectiveness of the charge controls specified in the statement by not addressing the revenue imbalances that arise as a result of the current charging mechanism for calls to ported-in numbers.

4.20 If Ofcom follows this option and does nothing then the MNOs' average received termination charge will differ from the TAC since ported-in minutes are charged at a different rate. MNOs with a higher TAC (particularly H3G) will receive a lower effective termination charge relative to their TAC and MNOs with a lower TAC (particularly 900/1800MHz operators) will receive a higher effective termination charge relative to the TAC. The magnitude of the financial effect of the current charging arrangements (relative to the situation where all minutes are directly routed) on an individual MNO depends on its TAC and the volume of its minutes that are terminated on ported-in numbers. These financial effects will be at least as great as the figures quoted in paragraphs 4.47-4.48 below.

4.21 In addition, in the case of MNOs with a relatively high TAC (i.e. MNOs whose effective termination rate is likely to be below their TAC), there is also potential for under-recovery relative to costs. Such MNOs could fail to recoup their efficiently incurred costs for ported-in minutes, particularly where the TAC is close to cost (e.g. in later years of the charge control). This is of particular relevance to H3G[13] who, as the margin between its termination charge and its costs falls, could potentially under-recover relative to its underlying costs for mobile termination, due to the current method for charging for calls to ported-in numbers.

4.22 These differences between the effective termination rates that MNOs receive relative to their TAC have the potential for distortion of incentives in retail markets. Because of the current charging arrangements for calls to ported-in numbers, and their interaction with the charge controls, there is the potential for distortions to: (i) the

[13] This is because H3G's efficient costs are deemed to be higher than the other MNOs'.

incentive to encourage subscribers to switch from one network to another; and (ii) the incentive to encourage subscribers that do switch to port/change their number.

4.23 This distortion can be shown by a simple example. Where operator A's termination charge exceeds operator B's termination charge, operator B may have an increased incentive to target A's subscribers (in the hope they will port their numbers to B) to obtain higher termination revenue. This may create an adverse competitive impact on operator A whose customers are being targeted because of regulatory differences between the two operators rather than from normal competitive conditions. Operator B could also potentially face reduced competition for subscribers because Operator C will prefer to target its customer acquisition efforts against A's subscriber base as opposed to B's (given A's higher termination revenue).

4.24 Further, if operator A persuades a subscriber from B to switch, the termination rate it receives for calls to that subscriber would be below its own termination charge, and possibly its underlying costs of providing termination. This might dissuade operator A from competing for B's subscribers. If a former B subscriber does switch to A, operator A may have an incentive to impede/not promote/make it inconvenient for that subscriber to port their number (so that A does not receive operator B's lower termination charge).

4.25 These effects are likely to be more serious where the differences between individual MNOs' TACs are significant. For example, in year 1 of the charge control the TAC charge for 900/1800MHz operators will be 5.5ppm (real 2006/07 prices), compared to 8.9ppm (real 2006/07 prices) for H3G, giving 900/1800MHz operators a clear incentive to target customers on H3G's number range.

4.26 MNOs have provided some evidence on the existence of these distortions. In response to the September 2006 Consultation document, Vodafone asserted that an incentive to target customers of 1800MHz-only operators exists. For example, Vodafone argued that:

"By 2010/11, the 2G operators will receive their underlying (common) termination charge less a small adjustment to cover the cost of porting on behalf of the donor operator. This will mean that Vodafone and O2 will no longer be artificially incentivised to encourage joiners from Orange and T-Mobile to port their existing numbers (because the former will receive the latter's higher termination rates) and conversely Orange and T-Mobile will no longer have an artificial motivation to encourage potential joiners from Vodafone or O2 to leave their number behind (i.e., to avoid only receiving their lower termination rate) and, in the meantime, the incentive will decline over time with the reduction in the magnitude of the rate asymmetry."[14]

4.27 As set out in the examples above, such distortions in the downstream retail market may lead a provider to discourage consumers from porting their number when they switch. Number portability is an important consumer right and Ofcom wishes to ensure that there are no perverse financial incentives distorting a provider's behaviour when a customer switches to them.

4.28 In summary, Ofcom is of the view that Option 1; do nothing, is not appropriate. This is because: (i) the average effective termination rate received by MNOs would differ from their TAC and; (ii) the current MNP and TAC interactions provide scope for distortion of competitive incentives in downstream retail markets.

[14] Vodafone – Mobile Call termination – proposals for consultation

***Question 1:** What are respondent's views on the appropriateness of Option 1 as a solution to the distortions created by the existing MNP mechanism on MCT?*

Option 2: Seek a self regulated inter-operator financial settlement system to adjust for billing arrangements for calls to ported-in numbers

4.29 In this option, an inter-operator financial settlement system would be established to correct the distortions in incentives and the imbalances in call termination revenues. Such a system would mean that MNOs that currently receive a higher effective termination rate than their own TAC have to transfer that excess revenue to other MNOs who receive a lower effective termination rate than their own TAC (to correct those other MNOs' unduly low revenues).

Advantages of this option

4.30 Option 2 would correct the financial imbalances identified in paragraphs 4.19 - 4.21, assuming the financial settlement system can be successfully implemented and is effective. This is because MNOs with a lower termination charge, who currently receive an effective termination charge above their TAC, would be required to pay MNOs with a higher termination charge a credit for the imbalance, and vice versa. The net result should be to reduce the financial imbalance of the existing system, relative to the position if there were direct routing to all mobile numbers.

4.31 Option 2 would therefore ensure that the average effective termination charge that an MNO receives aligns with the level of the charge controls set out in the Statement, and therefore improves the accuracy and effectiveness of those charge controls in this respect.

4.32 Option 2 would also remove the distortion to incentives in the retail market. If it is assumed that the financial settlement system is effective, the incentive for a MNO with a lower termination charge to target a customer of an MNO with a higher charge should now be no higher than it is to attract a new subscriber or a subscriber of an MNO with the same charge. Equally, a MNO with a higher charge would no longer have an incentive to encourage churning customers to take a new number as opposed to porting their existing number.

4.33 Thus, in principle, Option 2 could act as an effective remedy to the disadvantages of a 'do nothing' approach; namely, the variation between effective termination rates that MNOs receive and the charge controls set by Ofcom, and the distortions to incentives in the retail market.

Disadvantages of this option

4.34 Ofcom considers that, because of the current charging arrangements for calls to ported-in numbers, there is likely to be insufficient total MCT revenue flows to allow for sufficient transfers between MNOs:

- Where a number has been ported-in from a higher charge operator to a lower charge operator (so the originating network pays a high termination charge for calling that number), the lower charge operator receives an effective termination rate above its regulated charge.

- Conversely, where a number has been ported-in from a lower charge operator to a higher charge operator (so the originating network pays a low termination charge for calling that number), the higher charge operator receives an effective termination rate below its regulated charge.

- It will only be by chance that the higher effective termination revenues received by the lower charge operator exactly equals the lower effective termination revenues received by the higher charge operator. Unless this exact equalisation always occurs, it will not be possible to fully correct for the impact of ported-in numbers on MNOs' termination revenue through inter-operator settlements.

- Indeed, in a mature market such as the UK, it is likely that a significant proportion of recent entrants' subscribers' numbers have been ported-in from other networks. If a higher termination charge is set by these recent entrants (Ofcom's charge control for H3G is currently set at a higher level than for other MNOs), this makes it more likely that total MCT revenues are too low for Option 2 to be implemented.

4.35 This issue can be illustrated with a, purely hypothetical, example. Suppose that the regulated termination charge for incumbent MNOs is set at 5ppm. Suppose that there is also a relatively recent entrant which, reflecting its higher costs and other relevant factors, has its regulated termination charge set at 7ppm. Because the mobile market is mature, a significant proportion of the recent entrant's subscribers have been won from incumbent MNOs. Thus assume that 50% of that recent entrant's subscribers' numbers have been ported-in from incumbent MNOs. However, suppose that none of the incumbents' subscribers' numbers have been ported-in from the recent entrant. This implies that, in this illustrative example, the recent entrant's average termination charge is 6ppm[15]. Thus, under Option 2, the recent entrant would need to receive a transfer. However, the average termination charge that an incumbent receives is 5ppm i.e. it is not earning any additional revenues with which to make a suitable contribution to the recent entrant. In other words, in this example it is not possible to introduce Option 2 because overall MCT revenues are too low.

4.36 Even if the above were not true, Option 2 is likely to be difficult to implement. A system of this nature could take a significant period of time to implement fully from initial scoping to going live. An inter-operator financial settlement system would take time to agree between the MNOs. Settlement systems would need to be modified, tested and integrated with existing billing systems. Some costs would be incurred to develop this system. There is therefore significant potential for delays in implementing Option 2, particularly as some MNOs benefit from the existing MNP arrangement and there could be the potential for significant resistance to such an arrangement being put into place.

4.37 Ofcom notes that Orange, as part of the 2004 wholesale voice call termination market review[16], suggested a similar approach, which it called a "Combined system". Under this system when a recipient operator's termination charge was below the donor's charge it would pass back the difference. Operators with comparatively high termination charges will tend to earn an average charge below that level, due to the current charging arrangements for calls to ported-in numbers, and Orange's suggested 'pass back' would have offset this (although the extent of this offsetting could be too high or too low). Ofcom rejected this proposal on the grounds that (i) the 'passed back' revenue received on ported-out numbers would only exactly offset

[15] 7ppm on the 50% of directly terminated minutes and 5ppm on the 50% of minutes that terminate on ported-in numbers.

[16] See June 2004 Statement Annex E for a more detailed discussion of Orange's proposal.

the lower termination charge on ported-in numbers when the flows of ported-in and ported-out minutes were equal; and (ii) the termination charge paid by the originating operator need not reflect the cost of termination on the recipient network.

4.38 In summary, Ofcom is of the view that Option 2, an inter-operator financial settlement system, is not the appropriate remedy for this problem. This is because there may well be insufficient MCT revenues to allow for sufficient transfers between MNOs to effect a solution. Furthermore, even if MCT revenues were sufficient, there are likely to be difficulties and scope for delay in implementing this solution, and significant regulatory and implementation costs would be imposed on the industry. Therefore, given these drawbacks, it is unlikely that Option 2 could be effectively and successfully implemented and thus the benefits described in paragraphs 4.30 – 4.33 are unlikely to be realised.

Question 2: *What are respondent's views on the appropriateness of Option 2 as a solution to the distortions created by the existing MNP mechanism on MCT?*

Option 3: Change level of charge controls

4.39 Under this approach, the TACs set out in the charges controls in the Statement could be adjusted to take account of the impact of the current charging mechanism for ported-in numbers. Ofcom could, in principle, forecast levels of ported-in minutes between each operator in each of the charge control years, and then adjust the TACs that were set in the Statement to produce a new set of MNO-specific TACs which take into account the proportion of ported-in minutes. This option would result in new higher TACs for some operators and new lower TACs for other operators.

Advantages of this option

4.40 Mobile providers whose effective termination revenues for incoming calls are likely to be below their current TAC (due to the impact of the charging arrangements for calls to ported-in numbers) could have their TAC increased to take account of this shortfall. The reverse could be applied to providers whose effective termination revenue would be above their current TAC. Assuming that Ofcom's forecasts were correct, Option 3 would thus address the issue of MNOs receiving a higher or lower effective termination rate (relative to the original, unmodified TAC) resulting from the current charging arrangements, and would therefore ensure that the average effective termination charge that an MNO receives aligns with the level of the charge controls set out in the Statement. In this respect, Option 3 would improve the accuracy and effectiveness of those original charge controls.

4.41 Furthermore, implementation of Option 3 would not impose additional costs as compared to Option 2 as there would be no additional costs for the industry in respect of establishing a new inter-operator system. No complex settlement system would be needed and no development costs would be incurred.

Disadvantages of this option

4.42 Under Option 3 the distortion of incentives in downstream retail markets (as outlined in paragraphs 4.22 -4.27 above) would remain, and in particular there would continue to be incentives to target customers of MNOs with a higher regulated termination rate. Indeed, by widening the differences between MNOs' TACs there is potentially a danger that regulatory action could accentuate these distortions. In addition, in theory Option 3 may result in less efficient price signals on directly routed minutes although in practice the importance of this effect is significantly ameliorated by retail pricing practices (see paragraph 4.51 below for further details).

4.43 Option 3 would also rely on forecasts for each MNO of the number of ported-in minutes from each and every donor network, which could give scope for forecast error. In addition, Ofcom may also have to accurately forecast the point at which any new MNP arrangements might be put in place as the introduction of new arrangements mid year or on a phased basis would have a significant impact on the appropriate path of TACs for each MNO.

4.44 In summary, although Option 3 partially remedies the results of the existing charging arrangements for calls to ported-in numbers, it has three major disadvantages: (i) it does not address the distortion of incentives in downstream retail markets and could in practice accentuate such distortions; (ii) it relies on Ofcom being able to forecast accurately for each MNO the number of ported-in minutes from each donor network over a four year period from 2007-2011; and (iii) it requires Ofcom to accurately forecast the point at which any new MNP arrangements might be put in place. Therefore, Ofcom does not consider Option 3 to be a suitable approach.

Question 3: *What are respondent's views on the appropriateness of Option 3 as a solution to the distortions created by the existing MNP mechanism on MCT?*

Option 4: Modify mechanics of charge controls.

4.45 The final option for dealing with the imbalances in revenue created by the charging mechanism for calls to ported-in mobile numbers and the distortions to incentives in the retail market is to modify the charge control so that it takes full account of such imbalances and remedies them so that all MNOs' average effective termination revenues would be based on the appropriate termination charge (as defined in their TAC) regardless of an MNO's actual proportion of calls to ported-in numbers. The actual adjustment is discussed in more detail in Section 5.

The advantages of this option

4.46 Ofcom's view is that Option 4, of all the options considered, best addresses the impact of the existing arrangements for charging for calls to ported-in numbers. Specifically, Option 4 ensures that the average effective termination rate received by MNOs aligns with the level of the charge controls sets out in the Statement, and accordingly improves the accuracy of those charge controls in this respect. It also addresses the distortions in downstream retail markets. Furthermore, it does not require the implementation of a complex settlement system (Option 2), nor does it depend on accurate forecasting of ported-in minutes or possible future changes to MNP arrangements (Option 3).

4.47 The impact of this amendment on the five MNOs would vary depending on the TAC for each operator, and the proportion of minutes each MNO receives that are terminated on ported-in numbers. For example, Ofcom estimates that, under the current charging mechanism, in the first year of the charge control H3G could receive between £20-30m more termination revenue if Option 4 were implemented. In contrast, Vodafone and O2 would have their revenue reduced by roughly half of this amount each.[17] This is because Option 4 would correct for the revenue imbalance created by the current arrangements for charging for calls to ported-in numbers.

4.48 The impact of the current regime on Orange and T-Mobile is broadly neutral, although it may have a small negative impact on the effective termination rate they receive (relative to Ofcom's view of the appropriate path of termination charges, as reflected in their TACs) depending on the balance of traffic on their networks. This is because the TAC for Orange and T-Mobile, at least in the early years of the control, is higher than Vodafone's and O2's but lower than H3G's. Thus the net impact of Option 4 on Orange and T-Mobile will depend on the proportion of ported-in minutes from the different providers.

4.49 Similarly, the impact of the current regime on fixed operators is relatively small, and depends on the proportion of outgoing minutes from fixed operators to ported-in numbers (and the donor network of that ported-in number). The result of Option 4 would be that fixed operators would be paying average termination charges to MNOs for all minutes (direct *and* ported-in) that more closely reflect the charge controls specified by Ofcom in the Statement. Ofcom estimates that adopting Option 4 could increase the overall termination charges paid by fixed operators in the first year of the control by a small amount – less than £10m per year in aggregate (around 1% of total fixed to mobile termination revenues).

Disadvantages of this option

4.50 Under Option 4 there will be a slight increase in the regulatory burden on MNOs. This is because MNOs, in determining their MCT charges in order to comply with the charge controls, will have to provide more information (i.e. volumes of ported-in minutes) and perform a small number of additional calculations. However, Ofcom does not consider that this incremental regulatory burden would be material.

4.51 In theory, Option 4 may result in less efficient price signals. At present, the termination charge paid by an originating network for a call to a ported-in number does not reflect the underlying costs of the call to the recipient network (instead it reflects the costs of the donor network). However, by amending the charge control mechanics, Option 4 changes the price that MNOs charge for termination on directly routed minutes. Thus, Option 4 shifts prices for directly routed minutes, and therefore price signals for those minutes, away from the appropriate level (as set out in the charge control levels imposed in the Statement). However, in practice the importance of this impact on wholesale prices for directly routed minutes depends on the extent to which it affects behaviour in the retail market. It is thus significantly ameliorated by retail pricing practices, such as the tendency for retail prices not to exactly reflect the level of MCT charges (see in particular paragraph 3.23 of the Statement for further details).

Question 4: *What are respondent's views on the appropriateness of Option 4 as a solution to the distortions created by the existing MNP mechanism on MCT?*

[17] These figures are calculated by taking the difference between actual revenue received by each MNO on ported-in minutes compared to the revenue it would have received had the minutes been terminated directly. Ofcom, in calculating these figures, has used information supplied by MNOs on the total terminated minutes and the proportion of those minutes for each MNO terminated on ported-in numbers from each donor operator. The broad range for the impacts quoted reflects the uncertainty on the timing of the implementation of Option 4 and on the exact proportions of ported-in numbers for each network.

Summary

4.52 Therefore, Ofcom's preferred option, taking into account all advantages and disadvantages of each approach, is Option 4. In Ofcom's view this option (modifying the mechanics of the charge control) not only addresses the distortions created by the existing MNP mechanism, but has none of the significant drawbacks of the other three options in addressing the impact of MNP on the effective termination rates received by MNOs for MCT. It removes the requirement for complex and potentially costly settlement systems, and provides incentives for competition in downstream retail markets. It ensures that the effective average termination charge that an MNO receives aligns with the level of the charge controls set out in the Statement, improving the accuracy and effectiveness of those charge controls in this respect. Finally it requires only a minor increase in the regulatory burden on MNOs which must comply with the charge controls in any case and is unlikely to have a significant effect on price signals.

Question 5: *Do respondents agree with Ofcom's conclusion?*

Section 47 – the setting or modifying of conditions

4.53 Section 47(2) of the Act requires Ofcom to ensure that any setting of an SMP condition is:

- **objectively justifiable** in relation to the networks, services, facilities, apparatus or directories to which it relates;
- not such as to **discriminate unduly** against particular persons or against a particular description of persons;
- **proportionate** to what the condition or modification is intended to achieve; and
- in relation to what it is intended to achieve, **transparent**.

4.54 For the reasons set out in the Statement, and having taken its statutory duties into account as described in that document, Ofcom considers that it is appropriate for MNOs' average termination charges for all terminated minutes to reflect the TAC levels set out in the Statement (these levels are summarised in the fifth, sixth and seventh bullets of paragraph 2.10 above), rather than just the termination charges for Direct Minutes**.** The proposed modification to Conditions MA3 and MA4 is **objectively justifiable** because it is aimed at ensuring that the average effective termination charge earned by each MNO matches the appropriate level (namely the TAC), as set out in the Statement, by correcting for the impact of the current charging arrangements for calls to ported-in numbers on each MNOs' termination charges. In addition, the proposed modification removes the associated distortion of MNOs' incentives (e.g. to target subscriber acquisition efforts against MNOs with high TACs, to discourage subscribers won from MNOs with a lower TAC from porting their number etc; these incentives are described in greater detail in paragraphs 4.22 - 4.27 above).

4.55 The proposed modification to Conditions MA3 and MA4 does not **unduly discriminate** against any party because it applies equally to all MNOs. Whilst Ofcom is aware that the proposed modification has a different financial impact on different MNOs, this reflects objective differences between each MNO's TAC and the number of ported-in minutes terminated by each MNO.

4.56 The proposed modification to Conditions MA3 and MA4 is **proportionate.** In Ofcom's view, the proposed modification imposes an immaterial regulatory burden on the MNOs (as described in paragraph 4.50 above), is unlikely to have a significant effect on price signals (see paragraph 4.51 above), and it also best addresses the impact of the existing arrangements for charging for calls to ported-in numbers. Additionally, it will automatically cease to exist were direct routing to be implemented. In Ofcom's view, imposing this immaterial burden is a proportionate response, in the light of the potential benefits of the proposed modification (in terms of ensuring that average effective termination charges are not unduly high or low, and that incentives for retail competition are undistorted).

4.57 The proposed modification to Conditions MA3 and MA4 is **transparent** because the proposed requirements on the MNOs are clearly set out in the condition. This transparency is further aided by the explanation as to the intended operation and effect of the proposed conditions as set out in this document.

Section 87(4) – conditions about network access

4.58 Ofcom has considered the matters set out in section 87(4) of the Act. Ofcom considers that the proposed modification will contribute to securing effective competition in the long term (the factor set out in section 87(4) (d) of the Act) by ensuring (i) average effective termination charges reflect the TAC levels set out in the Statement; and (ii) that incentives to compete at the retail level are not distorted. Further, by addressing the problem that average effective termination charges may be below the TAC levels set out in the Statement, Ofcom considers the proposed modification contributes to the recovery of the efficient costs of the investment made by the terminating MNO (the factor set out in section 87(4) (c) of the Act) by addressing the impact of the current arrangements for charging for calls to ported-in numbers.

Section 88 – conditions about network access pricing

4.59 Ofcom considers that the tests in section 88 of the Act have been met. In relation to section 88(1) (a), Ofcom considers that, were the proposed modification not introduced there is a relevant risk that: (i) average effective termination charges differ from the TAC levels set out in the Statement; and (ii) incentives to compete at the retail level are distorted. Both these factors risk having adverse effects for MNOs, purchasers of termination and end consumers. For example, if an MNO's termination charge is unduly high then purchasers of that termination (fixed operators and other MNOs) and their consumers are adversely affected. In relation to section 88(2) (b), Ofcom considers that, by addressing these adverse effects, the proposed modification promotes efficiency and sustainable competition and confers the greatest possible benefits on end users.

4.60 As also required by section 88(2) of the Act, the impact of the proposed modification on the MNOs' investments has been taken into account. The TAC set in the Statement allows for a recovery of efficiently incurred costs including an appropriate return on capital employed. The proposed modification ensures that an MNO's average effective termination charge more closely matches its TAC. This is particularly important in the final years of the charge controls, when the TAC is closest to Ofcom's view of the appropriate cost benchmark (as set out in the Statement).

Section 5

Ofcom's preferred option

Introduction

5.1 For the reasons set out in Section 4, Ofcom considers Option 4 to be the most appropriate to address the fact that the current charging mechanism for calls to ported-in mobile numbers results in effective termination charges (i.e. the average termination charge, taking into account revenue from termination on ported-in numbers as well as from directly routed minutes) that may be either above or below the relevant efficient operator charge set for termination for calls to the recipient network.

5.2 To be given effect, Option 4 requires a modification to the charge control such that it takes full account of the identified imbalances (in terms of revenue and incentives) that arise from the existing regime and remedies them so that all providers will receive revenues based on their own TAC regardless of whether the call is terminated on a ported-in number or directly on a number originally allocated to the terminating operator.

5.3 The modification would apply to the following SMP services conditions:

- Condition MA3 – Control of Fixed to Mobile Interconnection Charges; and
- Condition MA4 – Control of Mobile to Mobile Interconnection Charges.

5.4 These conditions (the charge controls) and related definition would be modified such that they apply to both ported-in and direct minutes rather than, as was previously the case, direct minutes only. The details of Ofcom's proposed modifications at Annex 5 are explained below.

Adjustment to the charge control

5.5 Under Option 4, Ofcom proposes to modify the charge controls so that MNOs would receive revenues based on their appropriate termination charge.

5.6 In the Statement published today Ofcom has imposed a charge control on the average of the charges levied by each of the five MNOs (i.e. daytime, evening and weekend charges) for terminating voice calls on their respective networks, weighted by the relative call volumes in the previous year. Ofcom's charge controls require that, during each year of the control, the average charge set by the regulated MNO (the Average Interconnection Charge or 'AIC') does not exceed the charge with which the operator is required to comply (the Target Average Charge or 'TAC').

5.7 As operators set different termination charges for different times of the day or week, a weighting mechanism must be used to determine the AIC. This weighting is designed to allow MNOs flexibility in price setting (e.g. to set different charges by time of day to reflect differences in traffic loading on their networks) while still meeting the TAC over all minutes.

5.8 The existing charge control formula calculates the average of the time of day charges (daytime, evening and weekend) weighted by their relative prior year volumes (i.e. the proportion of volumes that are either daytime, evening or weekend) to derive the

AIC. This is then compared to the TAC, to test whether the AIC exceeds the TAC for the provision of termination in each of the Relevant Years.

5.9 The use of prior year volume weights provides certainty to the MNOs when setting their time of day charges and therefore enables them to ensure compliance with their TAC at the beginning of each control period. It avoids the forecast risk that would arise if Ofcom (or the MNOs) attempted to forecast actual minutes for the compliance period.

5.10 Therefore, under the existing charge control the AIC for the first year (I_1) is defined as follows:

$$I_1 = \sum_i^3 p_1(i).v_0(i)$$

Where:

$p_1(i)$ are the charges at time of day *i* in the first year; and

$v_0(i)$ are the volume shares (of direct minutes) at time of day *i* in the previous year;

and *i* = 1, 2 or 3 correspond to day, evening and weekend[18].

Also note that $\sum_i^3 v_0(i) = 1$

since each of the $v_0(i)$ simply represent the proportion of total direct minutes at each time of day / week.

This is referred to in this document as the "original calculation".

5.11 Under Option 4, the AIC formula would be adjusted to take account of the revenue actually received due to the current charging arrangements for calls to ported-in numbers. For minutes terminated on the network which are directly routed (i.e. those that are terminated on the MNO's own number range under the existing arrangements) the calculation will remain as before – an average of the time of day charges weighted by their relative prior year volumes.

5.12 However, the formula would also take into account calls terminating on ported-in numbers. The question this raises is: how should the average termination charge across times of day on ported-in minutes from each other MNO be determined? One approach would be to calculate the average time of day charge for each operator weighted by their relative prior year volumes at each time of day. However, as discussed in the previous market review of wholesale voice call termination[19], this

[18] The charge control conditions do not limit the number of different prices that an MNO can set, but for simplicity of presentation, and consistent with the current practice of the MNOs, Ofcom has described the formula in terms of three different time of day prices.
[19] Oftel – review of Mobile wholesale voice call termination markets - 15 May 2003 – Annex I

approach raises difficulties when considering the practical requirements of compliance for the MNOs. Most importantly, each MNO would need to forecast accurately the charges that all other MNOs set for termination during the forthcoming control year, since these would form part of its own AIC via ported-in minutes. Also, even if the average charge is known, each MNO has flexibility on how to set its charges by time of day and over the timing of any charge changes. In addition, each MNO would also need access to the prior year time of day weights for all MNOs in order to calculate whether the prices they propose to set would satisfy their own charge control condition. Therefore, taking into account these difficulties, Ofcom proposes an implementation of Option 4 which uses each MNO's respective TAC as an estimate of their average charge.

5.13 To take account of the average charge received for directly routed minutes and the average charge received for ported-in minutes, Ofcom proposes that the average charge for directly routed minutes (as determined according to the original calculation) should be weighted by the proportion of total terminated minutes that were directly routed in the prior year. Similarly, for ported-in minutes, Ofcom proposes that the TAC of each type of operator (900/1800MHz, 1800MHz-only and 3G-only), used as an estimate of the average charge received for ported-in minutes, should be weighted by the proportion of prior year minutes that terminated on a number ported-in from a number range corresponding to those operators.

5.14 For example, in calculating the AIC for a 900/1800MHz operator, suppose 80% of total minutes are terminated directly, while 5% of minutes are terminated on numbers ported-in from each of the other operators. The resulting AIC would be calculated by taking the average of the time of day charge for the 900/1800MHz operator (calculated using the original calculation) weighted by 80%, and the TAC for each of the other operators weighted by 5% each.

5.15 Thus the adjusted formula becomes:

$$I_1 = \left[\sum_{i}^{3} p_1(i).v_0(i)\right] W_o^{direct} + T_1^{900} W_0^{900} + T_1^{1800} W_0^{1800} + T_1^{3G} W_0^{3G}$$

Where:

$p_1(i)$ and $v_0(i)$ are as before;

T_1^{900}, T_1^{1800}, T_1^{3G} are the target charges in the first year for 900/1800MHz, 1800MHz-only, and 3G-only operators respectively;

W_o^{direct} is the proportion of total minutes terminated on the network in the previous year which are directly routed; and

$W_o^{900}, W_o^{1800}, W_o^{3G}$ are the proportions of total minutes terminated on the network in the previous year which are ported-in from a number range corresponding to a 900/1800MHz, 1800MHz-only, and 3G-only operator respectively.

5.16 The analogous formulae would apply for the AIC in the second, third and fourth years, and is as set out in the proposed modifications at MA3.2.1 b) and MA4.2.1 b).

5.17 If Option 4 is implemented as an amendment to the charge control, then, given that the charge control comes into force from 1 April 2007, in the first year of the control an adjustment would be required to take into account the fact that it would take effect during the first year.

5.18 Therefore, in the first year of the control period, and as set out in the proposed modifications at MA3.2.1.a) and MA 4.2.1.a), Ofcom proposes that the AIC should be calculated using a combination of both the original and the amended formulae. The overall AIC for the whole of the first year would then need to be determined as a weighted average of the two calculations. Ofcom proposes that the original calculation should apply to the period before any amendment comes into force, and the amended calculation to the remainder of the first year, with the overall AIC for the first year determined as an average weighted by the total number of terminated minutes in the corresponding periods of the prior year.

5.19 For example, if the amended compliance formula came into force on 1 October 2007, then for the period 1 April 2007 to 30 September 2007, the AIC would be calculated on the basis of the original calculation set out in the SMP condition MA3 and MA4 published today. However, for the period 1 October 2007 to 31 March 2008, the new amended formula would be used. The overall AIC for the first year would be calculated by averaging these two components, weighted according to the proportion of total terminated minutes in the year 2006/07 before and after 1 October 2006.

5.20 Thus, in summary, Ofcom is proposing an amended compliance formula involving three levels of weights (all using prior year volumes):

- By times of day to derive the AIC on direct minutes (as in the original calculation);
- By types of call to derive the AIC across direct and ported-in minutes; and
- By period of the first year to derive the AIC across the original calculation and the adjusted formula (i.e. before and after implementation of the modification).

5.21 In order to give effect to the above, as set out in Schedule 1 to the Notification at Annex 5, paragraph A, Ofcom also proposes to define “Direct Minutes” as terminated minutes for which the terminating MNO sets the termination charge, and “Ported-in Minutes” as terminated minutes for which the terminating MNO does not set the termination charge. This is to differentiate between the two types of terminated minutes. Further, Ofcom has proposed deleting the words “and where the Dominant Provider sets the charge” from the definitions of Fixed-to-Mobile Call and Mobile-to-Mobile Call, as set out in Schedule 1 to the Notification at Annex 5, paragraph B. This is to ensure any reference to such calls, apply to both Direct and Ported-in Minutes. Ofcom notes that if any new MNP arrangements (for example, a direct routing arrangement for ported-in numbers) are put in place during the four year charge control, the proposed amendments would not need to be altered again. This is because all terminated minutes would effectively become “Direct Minutes”.

Question 6: *What do respondents think about Ofcom’s proposed amendment to the compliance formula?*

Annex 1

Responding to this consultation

How to respond

A1.1 Ofcom invites written views and comments on the issues raised in this document, to be made **by 5pm on 5 June 2007**.

A1.2 Ofcom prefers to receive responses as e-mail attachments, in Microsoft Word format, as this helps us to process the responses quickly and efficiently. We would also be grateful if you could assist us by completing a response cover sheet (see Annex 3), to indicate whether or not there are confidentiality issues. This response coversheet is incorporated into the online web form questionnaire.

A1.3 For larger consultation responses - particularly those with supporting charts, tables or other data - please email Dermot.Nolan@ofcom.org.uk attaching your response in Microsoft Word format, together with a consultation response coversheet.

A1.4 Responses may alternatively be posted or faxed to the address below, marked with the title of the consultation:

Dermot Nolan
Floor 4
Competition Policy Group
Riverside House
2A Southwark Bridge Road
London SE1 9HA

Fax: 020 77834109

A1.5 Note that we do not need a hard copy in addition to an electronic version. Ofcom will acknowledge receipt of responses if they are submitted using the online web form but not otherwise.

A1.6 It would be helpful if your response could include direct answers to the questions asked in this document, which are listed together at Annex 4. It would also help if you can explain why you hold your views and how Ofcom's proposals would impact on you.

Further information

A1.7 If you want to discuss the issues and questions raised in this consultation, or need advice on the appropriate form of response, please contact Dermot Nolan on 020 783 4630.

Confidentiality

A1.8 We believe it is important for everyone interested in an issue to see the views expressed by consultation respondents. We will therefore usually publish all responses on our website, www.ofcom.org.uk, ideally on receipt. If you think your response should be kept confidential, can you please specify what part or whether all of your response should be kept confidential, and specify why. Please also place such parts in a separate annex.

A1.9 If someone asks us to keep part or all of a response confidential, we will treat this request seriously and will try to respect this. But sometimes we will need to publish all responses, including those that are marked as confidential, in order to meet legal obligations.

A1.10 Please also note that copyright and all other intellectual property in responses will be assumed to be licensed to Ofcom to use. Ofcom's approach on intellectual property rights is explained further on its website at: http://www.ofcom.org.uk/about/accoun/disclaimer/

Next steps

A1.11 Following the end of the consultation period, Ofcom intends to publish a statement in Summer 2007.

A1.12 Please note that you can register to receive free mail Updates alerting you to the publications of relevant Ofcom documents. For more details please see: http://www.ofcom.org.uk/static/subscribe/select_list.htm

Ofcom's consultation processes

A1.13 Ofcom seeks to ensure that responding to a consultation is easy as possible. For more information please see our consultation principles in Annex 2.

A1.14 If you have any comments or suggestions on how Ofcom conducts its consultations, please call our consultation helpdesk on 020 7981 3003 or e-mail us at consult@ofcom.org.uk . We would particularly welcome thoughts on how Ofcom could more effectively seek the views of those groups or individuals, such as small businesses or particular types of residential consumers, who are less likely to give their opinions through a formal consultation.

A1.15 If you would like to discuss these issues or Ofcom's consultation processes more generally you can alternatively contact Vicki Nash, Director Scotland, who is Ofcom's consultation champion:

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

Tel: 0141 229 7401
Fax: 0141 229 7433

Email vicki.nash@ofcom.org.uk

Annex 2

Ofcom's consultation principles

A2.1 Ofcom has published the following seven principles that it will follow for each public written consultation:

Before the consultation

A2.2 Where possible, we will hold informal talks with people and organisations before announcing a big consultation to find out whether we are thinking in the right direction. If we do not have enough time to do this, we will hold an open meeting to explain our proposals shortly after announcing the consultation.

During the consultation

A2.3 We will be clear about who we are consulting, why, on what questions and for how long.

A2.4 We will make the consultation document as short and simple as possible with a summary of no more than two pages. We will try to make it as easy as possible to give us a written response. If the consultation is complicated, we may provide a shortened version for smaller organisations or individuals who would otherwise not be able to spare the time to share their views.

A2.5 We will normally allow ten weeks for responses to consultations on issues of general interest.

A2.6 There will be a person within Ofcom who will be in charge of making sure we follow our own guidelines and reach out to the largest number of people and organizations interested in the outcome of our decisions. This individual (who we call the consultation champion) will also be the main person to contact with views on the way we run our consultations.

A2.7 If we are not able to follow one of these principles, we will explain why. This may be because a particular issue is urgent. If we need to reduce the amount of time we have set aside for a consultation, we will let those concerned know beforehand that this is a 'red flag consultation' which needs their urgent attention.

After the consultation

A2.8 We will look at each response carefully and with an open mind. We will give reasons for our decisions and will give an account of how the views of those concerned helped shape those decisions.

Annex 3

Consultation response cover sheet

A3.1 In the interests of transparency and good regulatory practice, we will publish all consultation responses in full on our website, www.ofcom.org.uk.

A3.2 We have produced a coversheet for responses (see below) and would be very grateful if you could send one with your response (this is incorporated into the online web form if you respond in this way). This will speed up our processing of responses, and help to maintain confidentiality where appropriate.

A3.3 The quality of consultation can be enhanced by publishing responses before the consultation period closes. In particular, this can help those individuals and organisations with limited resources or familiarity with the issues to respond in a more informed way. Therefore Ofcom would encourage respondents to complete their coversheet in a way that allows Ofcom to publish their responses upon receipt, rather than waiting until the consultation period has ended.

A3.4 We strongly prefer to receive responses via the online web form which incorporates the coversheet. If you are responding via email, post or fax you can download an electronic copy of this coversheet in Word or RTF format from the ‘Consultations’ section of our website at www.ofcom.org.uk/consult/.

A3.5 Please put any parts of your response you consider should be kept confidential in a separate annex to your response and include your reasons why this part of your response should not be published. This can include information such as your personal background and experience. If you want your name, address, other contact details, or job title to remain confidential, please provide them in your cover sheet only, so that we don’t have to edit your response.

Cover sheet for response to an Ofcom consultation

BASIC DETAILS

Consultation title:

To (Ofcom contact):

Name of respondent:

Representing (self or organisation/s):

Address (if not received by email):

CONFIDENTIALITY

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

Nothing	☐	Name/contact details/job title	☐
Whole response	☐	Organisation	☐
Part of the response	☐	If there is no separate annex, which parts?	

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

DECLARATION

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

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

Name   Signed (if hard copy)

Annex 4

Consultation questions

A4.1 The questions in this consultation are listed below:

Question 1: *What are respondent's views on the appropriateness of Option 1 as a solution to the distortions created by the existing MNP mechanism on MCT?*

Question 2: *What are respondent's views on the appropriateness of Option 2 as a solution to the distortions created by the existing MNP mechanism on MCT?*

Question 3: *What are respondent's views on the appropriateness of Option 3 as a solution to the distortions created by the existing MNP mechanism on MCT?*

Question 4: *What are respondent's views on the appropriateness of Option 4 as a solution to the distortions created by the existing MNP mechanism on MCT?*

Question 5: *Do respondents agree with Ofcom's conclusion?*

Question 6: *What do respondents think about Ofcom's proposed amendment to the compliance formula?*

Annex 5

Notification under sections 48(2) and 86 of the Communications Act 2003

Proposals for the modification of SMP services conditions MA3 and MA4 and related definitions in Schedule 1 to the Notification at Annex 20 to the mobile call termination market review statement published on 27 March 2007 imposed on H3G, O2, Orange, T-Mobile and Vodafone as a result of the market power determinations made by OFCOM that those providers have significant market power

WHEREAS:

1. OFCOM hereby make in accordance with sections 48(2) and 86(1) of the Act the following proposals for the modification of SMP services conditions MA3 and MA4 and related definitions by reference to market power determinations made in relation to markets in which OFCOM are satisfied there has been no material change since those determinations were made.

2. The proposals contained in this Notification are further to the market power determinations made in Notifications under section 79 of the Act by OFCOM on 27 March 2007 whereby H3G, O2, Orange, T-Mobile and Vodafone were determined to have significant market power in the following respective markets:

(a) wholesale mobile voice call termination provided to other Communications Providers by H3G in the United Kingdom;

(b) wholesale mobile voice call termination provided to other Communications Providers by O2 in the United Kingdom;

(c) wholesale mobile voice call termination provided to other Communications Providers by Orange in the United Kingdom;

(d) wholesale mobile voice call termination provided to other Communications Providers by T-Mobile in the United Kingdom; and

(e) wholesale mobile voice call termination provided to other Communications Providers by Vodafone in the United Kingdom.

3. As a result of, amongst other things, the market power determinations referred to in paragraph 2 above, H3G, O2, Orange, T-Mobile and Vodafone have been subjected to a number of SMP services conditions, including SMP services conditions MA3 and MA4. OFCOM are proposing to modify these SMP services conditions in respect of its application to the H3G, O2, Orange, T-Mobile and Vodafone in the market listed at subparagraph (a) of paragraph 2 above as set out in the Schedules to this Notification.

4. The effect of, and OFCOM's reasons for making, the proposals referred to in paragraph 4 above is set out in the accompanying explanatory statement.

5. OFCOM consider that the proposals referred to in paragraph 4 above comply with the requirements of sections 45 to 50 and sections 78 to 92 of the Act, as appropriate and relevant to each of the proposals.

6. In making the proposals set out in this Notification, OFCOM have considered and acted in accordance with their general duties in section 3 of the Act and the six Community requirements in section 4 of the Act.

7. Representations may be made to OFCOM about the proposals set out in this Notification and the accompanying explanatory statement by 5 June 2007.

8. Copies of this Notification and the accompanying explanatory statement have been sent to the Secretary of State in accordance with section 50(1)(a), and to the European Commission and the regulatory authorities of every other Member State in accordance with section 50(3) of the Act.

9. Save for the purposes of paragraph 2 of this Notification and except as otherwise defined in this Notification, any word or expression shall have the same meaning as it has in the Notification and otherwise any word or expression shall have the same meaning as it has in the Act.

10. In this Notification:

“**Act**” means the Communications Act 2003;

"**H3G**" means Hutchison 3G (UK) Limited (registered company number 3885486) including any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 736 of the Companies Act 1985, as amended by the Companies Act 1989 (or any subsequent amendment or replacement Act);

“the Notification” means the notification referred to in paragraph 2 of this Notification;

“**O2**” means O2 Limited (registered company number 1743099) including any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 736 of the Companies Act 1985, as amended by the Companies Act 1989 (or any subsequent amendment or replacement Act);

“**Orange**” means Orange Personal Communications Services Ltd (registered company number 2178917) including any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 736 of the Companies Act 1985, as amended by the Companies Act 1989 (or any subsequent amendment or replacement Act);

“**T-Mobile**” means T Mobile Limited (registered company number 2382161) including any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 736 of the Companies Act 1985, as amended by the Companies Act 1989 (or any subsequent amendment or replacement Act);

“**United Kingdom”** has the meaning given to it in the Interpretation Act 1978 (c. 30); and

“**Vodafone**” means Vodafone Limited (registered company number 1471587) including any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 736 of the Companies Act 1985, as amended by the Companies Act 1989 (or any subsequent amendment or replacement Act).

11. Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them in this Notification and otherwise any word or expression shall have the same meaning as it has in the Act.

12. For the purpose of interpreting this Notification:

(a) headings and titles shall be disregarded; and

(b) the Interpretation Act 1878 (c. 30) shall apply as if this Notification were an Act of Parliament.

13. The Schedule to this Notification shall form part of this Notification.

Neil Buckley

Director of Competition Policy

A person duly authorised in accordance with paragraph 18 of the Schedule to the Office of Communications Act 2002

27 March 2007

SCHEDULE 1

Proposed modification to SMP services conditions imposed on H3G, O2, Orange, T-Mobile and Vodafone under sections 45, 87 and 88 of the Act as a result of the market power determinations made by OFCOM on 27 March 2007 that H3G, O2, Orange, T-Mobile and Vodafone have significant market power in the market for wholesale mobile voice call termination provided by each of them to other Communications Providers in the United Kingdom

A) The following definitions are inserted in alphabetical order in Annex 20, Schedule 1, Part 1 to the Notification as set out below:

a) **"Direct Minutes**" means minutes of a Fixed-to-Mobile Call or Mobile-to-Mobile Call where the Dominant Provider sets the terminated charge;

b) "**Ported-in Minutes**" means minutes of a Fixed-to-Mobile Call or Mobile-to-Mobile Call where the Dominant Provider does not set the terminated charge;

B) The following definitions are modified in Annex 20, Schedule 1, Part 1 to the Notification as set out below (the proposed deletions are struck through):

a) "**Fixed-to-Mobile Call**" means a Call originating in a fixed Public Electronic Communications Network which is terminated on the Dominant Provider's network ~~and where the Dominant Provider sets the charge~~;

b) "**Mobile-to-Mobile Call**" means a Call originating in a mobile Public Electronic Communications Network of another Communications Provider which is terminated on the Dominant Provider's network ~~and where the Dominant Provider sets the charge~~;

C) The SMP services conditions MA3 and MA4 in Annex 20, Schedule 1, Part 2 to the Notification, shall be deleted and replaced by the text as set out below:

"a) **MA3.2** In this condition:

MA3.2.1. the Average Interconnection Charge means:

a) for the purpose of the First Relevant Year, the average of:

(i) the average of the Fixed-to-Mobile Interconnection Charges for Direct Minutes during the period from the beginning of the First Relevant Year until the date immediately preceding entry into force of this modification, calculated in accordance with Condition MA3.2.2, and

(ii) the Average Interconnection Charge during the period from the date of entry into force of this modification until the end of the First Relevant Year, calculated in accordance with Condition MA3.2.1 b),

weighted according to the proportion of total terminated minutes in the corresponding part of the Base Year.

b) for the purpose of the Second, Third and Fourth Relevant Years, the average of:

(i) the average of the Fixed-to-Mobile Interconnection Charges for Direct Minutes during the Relevant Year in question, calculated in accordance with Condition MA3.2.2; and

(ii) the Target Average Charge for Ported-in Minutes, for the Relevant Year in question,

weighted according to the corresponding volumes of Direct Minutes and Ported-in Minutes for each Dominant Provider's Target Average Charge in the Base Year.

MA3.2.2 The average of the Fixed-to-Mobile Interconnection Charges for Direct Minutes shall be weighted according to:

(a) the profile by Charging Period of the Dominant Provider's sum of Direct Minutes of Fixed-to-Mobile Calls and Mobile-to-Mobile Calls; and

(b) the corresponding volumes by month or part-month of the Dominant Provider's sum of Direct Minutes of Fixed-to-Mobile Calls and Mobile-to-Mobile Calls,

in the Base Year.

b) **MA3.3** For the purposes of calculating the Average Interconnection Charge for Direct Minutes where any Fixed-to-Mobile Interconnection Charges are in force during a part only of the Relevant Year (commencing or ending at a date in the course of the Relevant Year), the weighting shall be derived from:

a) the profile by Charging Period of the Dominant Provider's sum of Direct Minutes of Fixed-to-Mobile Calls and Mobile-to-Mobile Calls; and

(b) the corresponding volumes by month or part-month of the Dominant Provider's sum of Direct Minutes of Fixed-to-Mobile Calls and Mobile-to-Mobile Calls,

in the corresponding part of the Base Year.

c) **MA4.2** In this Condition:

MA4.2.1. the Average Interconnection Charge means:

a) for the purpose of the First Relevant Year, the average of:

(i) the average of the Mobile-to-Mobile Interconnection Charges for Direct Minutes during the period from the beginning of the First Relevant Year until the date immediately preceding entry into force of this modification, calculated in accordance with Condition MA4.2.2, and

(ii) the Average Interconnection Charge during the period from the date of entry into force of this modification until the end of the First Relevant Year, calculated in accordance with Condition MA4.2.1 b),

weighted according to the proportion of total terminated minutes in the corresponding part of the Base Year.

b) for the purpose of the Second, Third and Fourth Relevant Years, the average of:

(i) the average of the Mobile-to-Mobile Interconnection Charges for Direct Minutes during the Relevant Year in question, calculated in accordance with Condition MA4.2.2; and

(ii) the Target Average Charge for Ported-in Minutes, for the Relevant Year in question,

weighted according to the corresponding volumes of Direct Minutes and Ported-in Minutes for each Dominant Provider's Target Average Charge in the Base Year.

MA4.2.2 The average of the Mobile-to-Mobile Interconnection Charges for Direct Minutes shall be weighted according to:

(a) the profile by Charging Period of the Dominant Provider's sum of Direct Minutes of Fixed-to-Mobile Calls and Mobile-to-Mobile Calls; and

(b) the corresponding volumes by month or part-month of the Dominant Provider's sum of Direct Minutes of Fixed-to-Mobile Calls and Mobile-to-Mobile Calls,

in the Base Year.

d) **MA4.3** For the purposes of calculating the Average Interconnection Charge for Direct Minutes where any Mobile-to-Mobile Interconnection Charges are in force during a part only of the Relevant Year (commencing or ending at a date in the course of the Relevant Year), the weighting shall be derived from:

(a) the profile by Charging Period of the Dominant Provider's sum of Direct Minutes of Fixed-to-Mobile Calls and Mobile-to-Mobile Calls; and

(b) the corresponding volumes by month or part-month of the Dominant Provider's sum of Direct Minutes of Fixed-to-Mobile Calls and Mobile-to-Mobile Calls,

in the corresponding part of the Base Year.