Wholesale mobile voice call termination

Preliminary consultation on future regulation

Consultation

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Contents

Section 1

Executive Summary

A market review to consider the future of regulation of mobile termination

1.1 When fixed and mobile operators offer their customers the ability to call UK mobile numbers, they pay mobile operators a wholesale charge to complete those calls.[1] The rates that operators pay are known as "mobile call termination" (MCT) charges.

1.2 On 31 March 2011, the current rules which set wholesale MCT charges will expire. In our Mobile Sector Assessment[2] (MSA I) we asked what rules, if any, should apply after that time. This consultation initiates a market review to consider that question in more detail.

1.3 This consultation focuses primarily on how changes in mobile markets might impact regulation of MCT after March 2011(which is one reason why this market review is closely related to our MSA consultations, the second of which will be published shortly). The mobile sector is changing rapidly; for an increasing number of users, mobile services are used to access the internet and send messages as much as to make telephone calls. These changes may affect the question of what MCT charges are likely to lead to the best outcomes for consumers, and whether regulation is needed to achieve this.

1.4 Responding to a changing market, European regulators have been debating the merits of different approaches to regulating MCT charges. The European Commission (EC) has issued a Recommendation,[3] which sets out its views about how national regulators, including Ofcom, should approach these questions. We assess the approach set out by the EC in its Recommendation in section 6. At this stage however, we think it worthwhile to consider the merits of alternative approaches (in terms of the impact on consumers), also, as part of the wider policy debate.

1.5 The focus of this preliminary consultation is on whether to regulate prices and, if so, how. It does not, at this stage, consider what the regulated prices might be, or attempt to decide the best approach.

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[1] 'Call termination' describes the process of connecting ('terminating') a telephone call from a user on one network to a user on another network. Wholesale voice call termination is the service provided by a network operator to other providers in order to terminate calls. It is provided to and by all types of operators, including between fixed and mobile operators, normally on a two-way basis.

[2] Our Mobile Sector Assessment consultation (the MSA I Consultation) (see http://www.ofcom.org.uk/consult/condocs/msa08/) considers whether and how Ofcom's strategic approach to regulation of mobile services should adapt given developments in the sector. It considered many issues, although highlighted MCT as an area for particular focus. In the MSA I Consultation, we conjectured that the current MCT regime would come under growing pressure, given changes in the mobile market, and sought a strategic debate about future options for change. That debate will now be progressed through the market review described in this consultation. Our second MSA consultation will be published shortly and looks at Ofcom's wider regulatory strategy for the mobile sector.

[3] See http://ec.europa.eu/information_society/policy/ecomm/doc/implementation_enforcement/article_7/recom_term_rates_en.pdf EC final Recommendation on termination (EC C(2009)3359).

The question of which costs are paid for by termination charges is pivotal

1.6 Currently, MCT charges are controlled by regulation and are based on the cost of providing wholesale call termination. The question of what it costs operators to provide this service is contentious and highly contested. Ofcom has previously calculated those costs by looking at the additional costs of providing wholesale call termination ('incremental' costs), including a share of the fixed and common costs[4] that a mobile operator is likely to incur in running a network which supports a number of services, including voice calls.

1.7 The EC's Recommendation suggests revising this approach, essentially by no longer allowing fixed and common costs to be paid for by termination charges. This change would be likely to reduce the MCT charges currently in place across the European Union, potentially by a significant amount.[5]

1.8 This market review considers, among other things, a range of approaches to this question, and whether Ofcom should adopt a similar approach to that recommended by the EC. In arriving at a decision on the best approach, Ofcom is required to take utmost account of the EC Recommendation.

The MSA I consultation and wholesale voice call termination

1.9 In the MSA I Consultation, we stressed the importance of thinking widely about the regulatory options, including not regulating termination charges or adopting a simpler approach (at the extreme, setting termination rates to zero, sometimes called Bill and Keep (B&K)).

1.10 In the MSA I Consultation, we gathered and analysed data from the UK and other countries, and commissioned analysis by expert advisers on various aspects of call termination. Where possible, this analysis has been included in the annexes to this consultation.[6]

1.11 Based on this initial work, our current view is that there is no single regulatory option for termination regulation that is unambiguously better than the alternatives. Different approaches would affect different types of consumers to differing degrees, particularly if there were to be a sudden shift in approach, and considerable uncertainty remains about how future services might develop.

Possible regulatory remedies

1.12 Determining what approach should be adopted for the period after March 2011 will involve weighing the relative merits of various different approaches.

1.13 With the possible exception of deregulation, all of the options identified would lead to a reduction in mobile termination rates. This raises a further question about whether we should adopt a policy of reducing termination rates as far and as fast as we reasonably can, within the boundaries of sound economic policy, and the legal

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[4] This is termed "long-run incremental cost plus" (or "LRIC+"). A fuller explanation of LRIC+ and other cost assessment approaches is set out in section 6).

[5] The European Regulators Group (ERG) 'snap-shot' benchmark calculates the average EU mobile termination rate at 8.7 Euro cents per minute. The EC's impact assessment presented to COCOM on 10th December suggested that if the EC's proposed methodology were applied mobile termination rates would fall to around 2.5 Euro cents per minute.

[6] In part, this work has also been used to help inform our recent consultation on fixed termination regulation, on the Network Charge Control See the review of BT Network Charge Control at http://www.ofcom.org.uk/consult/condocs/review_bt_ncc

framework, whilst recognising underlying cost differences. One objective of such a policy would be to allow greater flexibility at the retail level, thereby facilitating innovation, although doing so may have other consequences that would need careful consideration.

1.14 We have not yet decided whether we should adopt such a strategy, but have identified six possible options for the future regulation of MCT. We would welcome comments on all these options, on other options that we should consider and on the broader question of our strategy on the future regulation of MCT.

Possible regulatory approaches for MCT

- *Deregulation* – removal of all termination regulation from mobile operators.
- *Long Run Incremental Cost + (LRIC+)* – charge control set broadly on the basis of the same cost standard as it is today.
- *Long Run Marginal Cost (LRMC)* – revised charge control methodology with no allowance for recovery of common costs, broadly the approach recommended by the EC.
- *Capacity Based Charges (CBC)* – a different approach to setting the structure of termination charges based on the capacity required for termination.
- *Mandated Reciprocity* – set mobile changes to match the rates set for fixed operators.
- *Mandated "bill and keep" (B&K)* – termination charges effectively set at zero.

The most important issue is how each approach affects consumers

1.15 We consider that all of the options identified above, with the possible exception of the deregulatory option (the outcome of which is uncertain) is likely to reduce the current pence-per-minute charge for MCT.[7] Such a reduction would have different effects on consumers, competition and commercial practice in the industry.

1.16 These effects are considered further in section 6. In summary we consider that:

- lower mobile termination rates are likely to benefit consumers overall (both fixed and mobile) because operators will have greater retail pricing flexibility. We would expect operators to be able to offer consumers a wider variety of retail packages and tariff structures;
- while some low-usage customers may be worse off (if termination rates are reduced) there may be more appropriate policy mechanisms to ensure that these and other vulnerable consumer groups are adequately protected;
- lower termination charges might ameliorate possible competition concerns over on/off-net price differentials;
- lower mobile termination charges are likely to lessen possible concerns over discrepancies between fixed and mobile termination rates; and

[7] Relative to current rates calculated using a LRIC+ methodology.

- the commercial impact of lower termination rates on UK operators, particularly regarding the potential for discrepancy of effect between fixed and mobile operators, needs careful consideration.

Structure of the document

1.17 This documents sets out the arguments summarised above in the following way:

- Section 2 provides a more detailed background to the mobile sector, and the market review process.

- Section 3 notes our historical approach to defining the wholesale mobile call termination market.

- Sections 4 and 5 build on the market definition, and describe how we approach the assessment of market power and the implications for consumers of a finding of significant market power (SMP).

- Finally, section 6 examines what regulatory remedies might be appropriate to address a SMP, were such a finding to be made.

Key questions in the consultation

1.18 We ask several questions in the consultation; these are the three primary questions on which we would like stakeholder’s views. These are repeated in the main body of the document.

Question 1.1: Should our policy approach to regulating MCT change? For example, given the possible benefits, should we adopt a policy of reducing termination rates as far and fast as we reasonably can, within the boundaries of sound economic policy, and whilst recognising underlying cost differences? If our policy approach did change, what do you think are the relevant factors for us to consider in deciding on the best future policy to regulating MCT?

Question 1.2: Are there additional options (other than the six set out in this consultation) that we should consider? If so what are they and what advantages/disadvantages do they offer?

Question 1.3: Do you agree with our preliminary views set out for each of the options? If not, what are the additional factors that we should take into consideration, and why are they relevant to our analysis?

Next steps

1.19 This consultation closes on 29 July 2009. Annex 1 provides further details of how to respond to this consultation.

Section 2

Introduction and Background

Section summary

2.1 This section provides some context on the importance of mobile services to consumers and summarises the existing regulatory regime. It also highlights the relative importance of call termination markets and considers the European dimension.

Introduction

2.2 This is an initial consultation on the next mobile call termination market review. The overall review will need to be completed ahead of the expiry of the current mobile call termination controls on 31 March 2011.

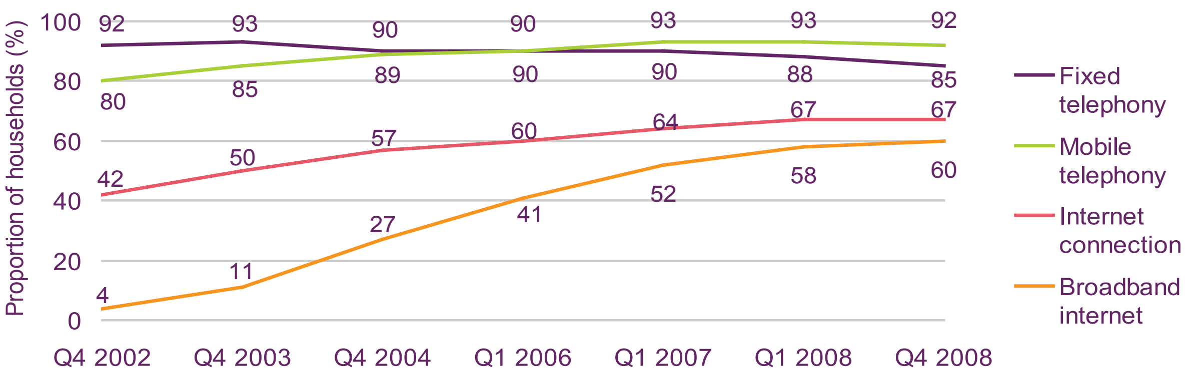
2.3 This consultation considers the background to the current regulatory position and the possibility that alternative regimes might better meet Ofcom's broad policy goals of fostering efficient competition and furthering the interests of consumers, in the longer term. In particular, we identify six possible options for future approaches to regulating mobile termination. Section 6 considers each option, including an analysis of the pros and cons for each, in more detail.

Background

Mobile is the most popular telecom technology in the UK

2.4 Mobile is now the most pervasive telecoms technology among households as shown in Figure 1, with more households using a mobile phone (92 per cent) than any other telecom services, including fixed line (85 per cent).

Figure 1: Household penetration of key telecoms technologies[8]



2.5 Many commentators regard the UK market as among the most competitive in the world.[9] Figure 2 shows how the three of the four longer established MNOs (Vodafone, Orange, O2 and T-Mobile) have been static or losing retail market share. This loss in market share is due largely to increased competition from H3G, and MVNOs, notably Virgin, and Tesco Mobile.

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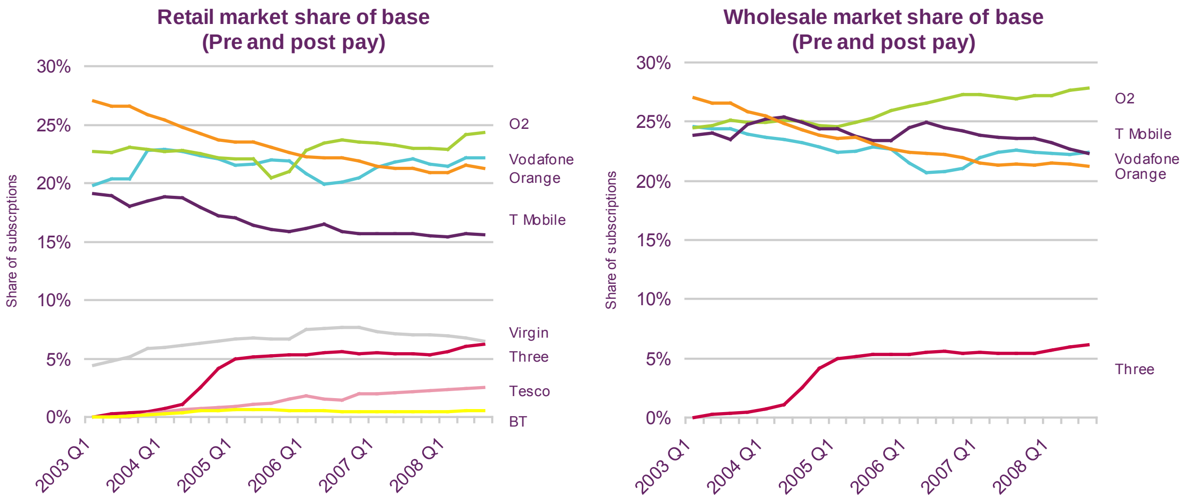
[8] Source: Ofcom research

[9] See telecommunications note from Investec Securities on 16 April 2008 and UK Trade and Investment article at http://www.ukinvest.gov.uk/Brochure/10447/en-GB.html

2.6 Figure 2 also shows wholesale subscriber market shares – that is, the breakdown of market shares according to the underlying network used to supply services to customers, regardless of who sold the service and who the billing service provider is. Wholesale market shares have been relatively stable on this measure over the past few years.

Figure 2: Retail and wholesale subscriber market shares



Source: Ofcom, MNOs

Mobile Termination Rates

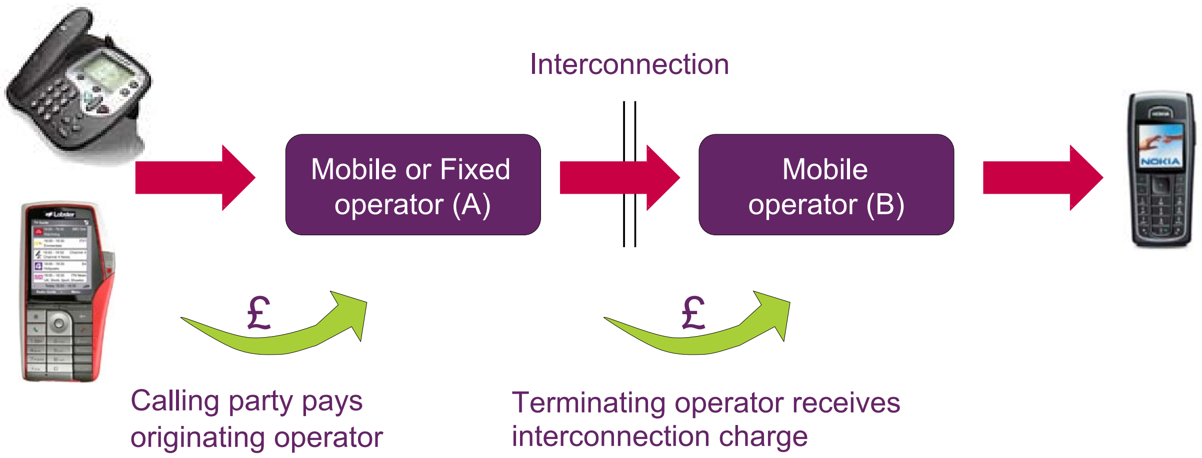
2.7 In order for customers of different networks to be able to call each other, telecommunications networks, including mobile networks, need to be connected to one another. One long-standing role of telecommunications regulators across the world has been to help ensure adequate interconnection of telecommunications networks. Without regulation, larger networks might seek to refuse interconnection to smaller networks, and thereby undermine competition – since smaller networks could not offer an attractive service to new customers. This reflects the feature of communications networks that the more people you can reach and be reached by on a network, the more valuable its service is likely to be to you.

2.8 In practice, network operators conclude interconnection agreements, setting out the terms and conditions on which they will interconnect – with Ofcom resolving disputes concerning those agreements if either party asks it to do so.

2.9 One of the services that is provided between network operators is call termination – that is, the completion of a call to a customer of another network. Mobile voice call termination is the service necessary for a network operator to connect a caller with the intended mobile recipient of a call on a different network. Under current interconnection practices, the network of the customer making the call pays an amount (known as the wholesale mobile call termination rate) to the network of the customer being called.[10] (Figure 3)

[10] This charge is referred to as a wholesale charge because it is charged and paid between network operators, rather than by retail customers.

Figure 3: Mobile termination and calling party pays



2.10 When considering the competitive characteristics of call termination, most regulators across the world have concluded that, without regulation, each operator is able to set a charge for connecting calls to its own customers without any competitive constraint. That is, in terms of the European Union (EU) Framework, the operator in question has significant market power (SMP) with respect to termination.

2.11 Given this, operators have an incentive to set the charge as high as possible. Therefore, many regulators including Ofcom have regulated termination rates, typically basing them on cost-oriented rates. The regulatory process for setting these rates is called a market review.

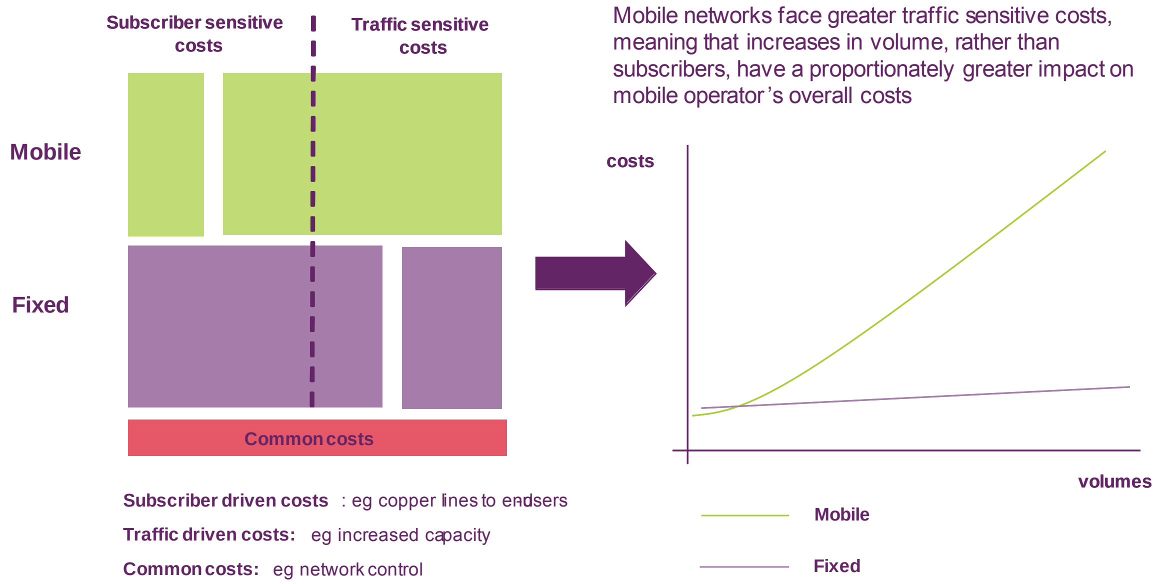
2.12 Termination rates are a very significant part of a mobile network operator's revenue. We estimate that 14% of total revenue is generated from mobile to mobile, or fixed to mobile call termination. Another way to think of this is that 14p in every pound spent on phone calls, goes to other networks to pay for terminating the call.

Differences between fixed and mobile

2.13 Regulated termination rates are set independent of *who* is buying termination (that is, on which network the incoming call originates), and both wholesale fixed voice call termination (FCT) and mobile voice call termination (MCT) have been regulated for some time.

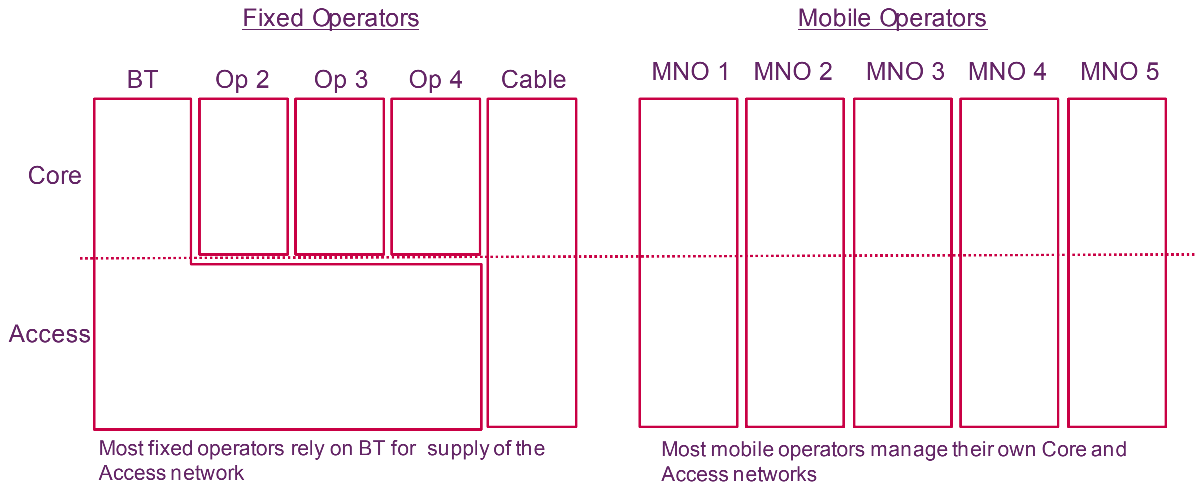
2.14 However, mobile and fixed sectors have very different market structures, reflecting different market developments over time and fundamental differences in the underlying technologies and associated cost structures. There are, for example, significant differences in cost drivers; traffic sensitive costs are significantly higher on mobile networks, whilst subscriber driven costs are more important on fixed networks. This is illustrated in Figure 4 below:

Figure 4: Illustration of traffic sensitive and subscriber sensitive costs on fixed and mobile networks



2.15 In the fixed sector, the legacy of monopoly means that a single fixed incumbent network operator, BT, competes with many smaller fixed operators. In the mobile sector, spectrum policy has largely determined the number of competitors, with allocations of first 2, then 4 and finally 9 spectrum licences suitable to operate a national mobile network, currently held by 5 different licensees. This picture may continue to change further with the release of more spectrum over the next few years.

Figure 5: Overview of the differences between core and access network ownership between fixed and mobile networks



Fixed call termination

2.16 BT's fixed termination charges are regulated directly as part of the Network Charge Control (NCC), which sets charges on BT for wholesale conveyance and interconnection services, including termination. Broadly speaking, BT's wholesale FCT charges are set on the basis of its underlying costs, using LRIC+ (Long-Run

Incremental Cost plus) methodology, which is a widely accepted economic cost methodology.[11]

2.17 Other operators' fixed termination charges are subject to the condition that they are required to provide network access and do so on fair and reasonable terms. Although in principle operators can agree FCT charges through commercial negotiation, in practice, charges are subject to industry wide reciprocity agreements. If Ofcom was required to determine a dispute regarding FCT charges, whilst treating each case on the facts specific to that case, it is likely that we would have regard to BT's regulated charges in determining what constituted "fair and reasonable terms".[12]

2.18 Wholesale FCT charges are currently no more than 0.25 pence per minute.[13] This rate is regulated until September 2009. A new network charge control is expected to be set later this year as part of the fixed narrowband market review.[14]

Mobile call termination

2.19 Our most recent market review, culminating in a Mobile Call Termination market review statement (the 2007 MCT Statement)[15], published on the 27th March 2007, found all five UK mobile network operators to possess SMP and capped call termination charges for each operator.

2.20 Mobile call termination has been calculated using the same well established LRIC+ economic cost standard, but has reflected the significant differences in how costs arise in a mobile network compared to a fixed network (see Figure 4 above).[16]

2.21 In addition, the charges reflect differences in the underlying costs for different types of network operators as a result of differences in their spectrum licences. As a result, the same charge level was set for the four 2G/3G network operators, based on the costs of a hypothetical average efficient operator, with a higher rate for H3G, recognising the higher costs it faces as a newer, 3G-only entrant (note however the consequences of the appeal by BT of these rates, as discussed at paragraphs (2.37 to 2.43).

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[11] Long Run Incremental Cost LRIC is a method of understanding the incremental cost to an operator for providing a service, compared with not providing that service. LRIC+ includes an allocation for the fixed costs and common costs for the service, so that the cost of a minute of traffic on a particular network segment is the same for all services carried across that segment. Pre-2005 fixed and mobile termination rate mark-ups were equi-proportionate (EPMU) (Equi-proportionate means that all mark-ups move up or down in an equal fashion. For example, it is equi-proportional if when the average income of all workers goes up 10%, so does the income of the "poor"). Since 2005, mark-ups have typically been more on the basis of fully allocated cost (FAC) because of data limitations though we would not expect resulting rates to differ significantly.

[12] This position was made public in the November 2003 fixed narrowband market review Statement http://www.ofcom.org.uk/consult/condocs/narrowband_mkt_rvw/fixednarrowbandrsm.pdf.

[13] BT's actual FCT charges vary by time of day. The average charges are currently between 0.17ppm and 0.25ppm depending on the point of interconnection and the extent of conveyance (eg single/double tandem).

[14] See the Review of the Fixed Narrowband Services Wholesale Markets at http://www.ofcom.org.uk/consult/condocs/review_wholesale/ and the Review of BT Network Charge Control at http://www.ofcom.org.uk/consult/condocs/review_bt_ncc.

[15] See http://www.ofcom.org.uk/consult/condocs/mobile_call_term/statement/

[16] In particular, a much greater proportion of costs in a mobile network (eg the radio access network) are sensitive to the volume of traffic rather than the number of subscribers. Under the current LRIC+ costing methodology, this leads to a greater proportion of cost being recovered from traffic services including voice termination. In a fixed network, by contrast, the local loop access costs, which are significant, vary with the number of subscribers rather than traffic.

2.22 Over the past decade companies with an interest in mobile termination rates (i.e. fixed and mobile operators) have challenged sector regulators (including through the courts) over the setting of mobile termination rates, largely responding to the significant net commercial impact of these wholesale payments.

2.23 Differences in structure and relative significance of termination rates have led to retail prices for mobile calls being mostly charged on a per minute basis, while fixed calls are currently commonly billed for on a monthly basis, or 'flat rate' tariffs. Most time-plans mobile operators retail do not distinguish between off-net and on-net calls, and instead contain bundles of minutes that can be used to terminate calls on any network, fixed or mobile.

2.24 However, we are starting to see a blurring of the boundaries between fixed and mobile, with mobile phones being used in the home and fixed lines providing mobile connectivity, for example with BT's Fusion service.

2.25 Although we are seeing new propositions emerge which take advantage of the blurring boundaries between fixed and mobile, growth in the number of providers of mobile and fixed services alone is unlikely to increase competition in termination of mobile voice calls. This is because each terminating operator has total control over calls terminating to its customers on its network.

2.26 As such, in the past we have defined call termination markets separately for each operator, with each operator having a 100% market share of calls terminating on its network. Each operator therefore potentially holds SMP within each call termination market, subject to any purchasers having countervailing buyer power (CBP) in that market (Section 3 provides further detail on market definition).

2.27 If these findings were to change, it may, alongside continued convergence of fixed and mobile services, have an impact on future findings of SMP for mobile operators.

2.28 This consultation is focused on mobile call termination. Regulation of fixed call termination is considered as part of the fixed narrowband market review[17] , and the Network Charge Control.[18]

The purpose of regulation is to deliver our statutory duties and international obligations

2.29 Ofcom's principal duty as set out at s3(1) of the Communications Act 2003 (the Act) is 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.*"

2.30 Ofcom's role as a regulator is governed by those powers and duties conferred on us by Parliament and set out in various laws including the Act. This Act gives effect to much of the regulatory framework for electronic communications that has been established by the European Commission (EC) across the European Union (which is set out in four principal directives).[19]

[17] http://www.ofcom.org.uk/consult/condocs/review_wholesale/
[18] http://www.ofcom.org.uk/consult/condocs/review_bt_ncc/
[19] Directive 2002/19/EC, Directive 2002/20/EC, Directive 2002/21/EC, Directive 2002/22/EC and Directive 2002/58/EC. See also the EC's Recommendation on relevant product and service markets

2.31 Sections 3 and 4 of the Act outline Ofcom's general duties and community obligations. The specific requirements relevant to this consultation are discussed further in sections 6 (see paragraphs 6.7 to 6.8).

Dealing with market power and market failure

2.32 Under the Act, we have the power to impose conditions on communications providers with SMP in particular markets. We can also impose rules on all communications providers as general conditions.[20] This power is executed using a process called a market review. National regulatory authorities ("NRAs"), such as Ofcom, are required to carry out reviews of competition in communications markets to ensure that regulation remains appropriate and proportionate in the light of changing market conditions[21].

2.33 Each market review has three stages as laid out in sections 79 to 91 of the Act:

2.33.1 definition of the relevant market or markets;[22]

2.33.2 assessment of competition in each market, in particular whether any undertakings have SMP in a given market[23]; and

2.33.3 assessment of appropriate regulatory obligations where there has been a finding of SMP.

Characteristics of wholesale mobile voice call termination markets today

2.34 In the past Ofcom has held that termination of voice calls on each mobile network constitutes a separate market in which the terminating MNO has a 100% market share. And furthermore, that wholesale purchasers of termination have little or no countervailing buyer power. Consequently, terminating operators appear to have little or no incentives to keep charges low.

2.35 Barriers to entry are currently very high (and perhaps absolute) as no alternative provider may currently terminate calls on a particular number without the agreement of the MNO which provides service to the called party. A growth in the number of providers of mobile services, perhaps arising from liberalisation of spectrum usage continues to look unlikely to have any impact on competition to terminate voice calls, as each provider is likely to have a 100% share of call termination to its customers.

2.36 Sections 3 and 4 of this consultation looks at these questions, and the issue of CBP in more depth. Our initial view is that the market definition and SMP assessment in this market is likely to be the same or very close to previous findings.

Previous market reviews and appeals

2.37 Mobile call termination charges have been subject to some form of regulation for nearly two decades. Figure 6 below highlights some key points in the regulatory timeline of MCT services. Regulation of MCT has also been subject to several appeals and disputes. The most recent Appeals process before the Competition

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within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC.

[20] Section 45 of the Communications Act sets out Ofcom's powers to impose general conditions and significant market power conditions.

[21] Sec 80 et seq of the Communications Act (2003)

[22] Section 79 of the Communication Act (2003)

[23] Section 80 of the Communications Act (2003)

Appeals Tribunal (CAT), regarding Ofcom's 2007 MCT market review, recently concluded.[24] Figure 7 shows the reduction of MCT charges paid by BT for each of the 5 mobile network operators (MNOs) over a similar period.

Figure 6: Time line of regulation 1985 - 2009

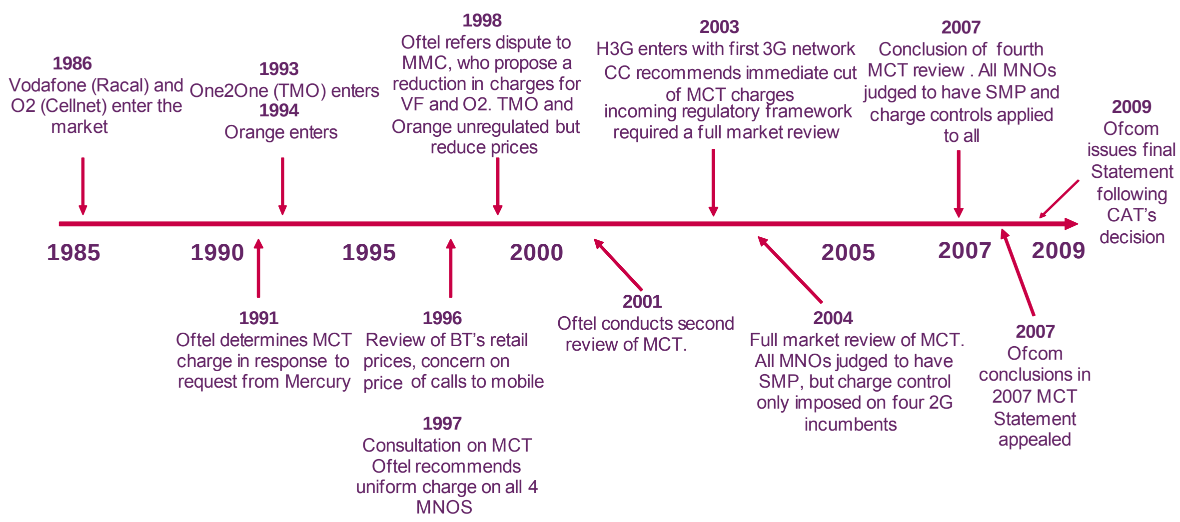
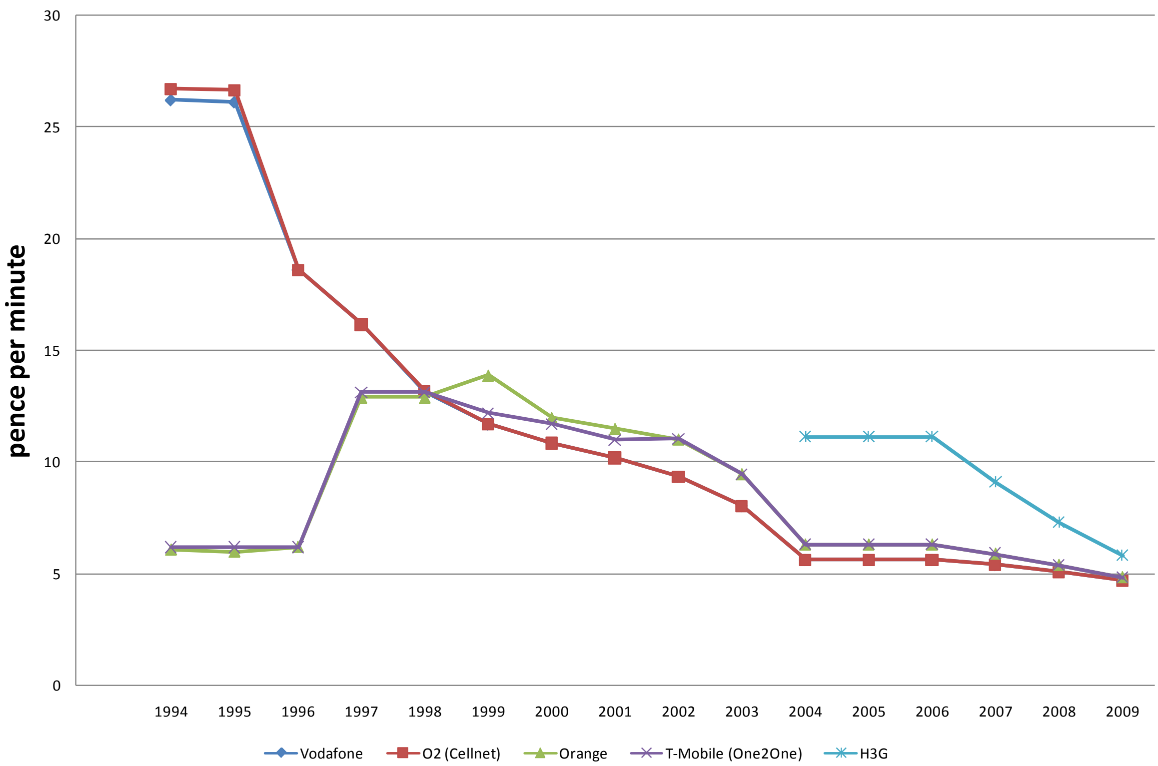


Figure 7: Changes in the termination charges payable by BT



Source: competition Appeal Tribunal, Competition Commission and Ofcom

2.38 Our most recent market review, in 2007 (the 2007 MCT Statement), concluded that all five UK MNOs possessed SMP, and imposed a price control on each MNO for a four year period, 2007-2011.

[24] H3G's appeal against Ofcom's SMP finding and Ofcom's decision to apply a price control is pending before the Court of Appeal.

2.39 In May 2007, both BT and H3G appealed Ofcom's 2007 MCT Statement. H3G's appeal related to Ofcom's determination that H3G has SMP and the price control. BT's appeal related to the level of the price control only.

2.40 On 20 May 2008, the CAT upheld Ofcom's finding of SMP for H3G, dismissing the non-price control matters arising in H3G's appeal. That judgment was appealed by H3G on 17 June 2008 to the Court of Appeal. Following a hearing in early March 2009, the Court of Appeal's judgment is currently awaited.

2.41 On 18 March 2008, the CAT referred various "price control matters" to the Competition Commission (CC). The CC notified the CAT of its determination of the price control matters on 16 January 2009.

The CC's determinations

2.42 The CC's determinations result in the following reduced ppm charges in real 2006/07 prices (original charges set in the 2007 MCT Statement are shown in brackets) which are set out in its final set of determinations.

	2007/08	2008/09	2009/10	2010/11
Vodafone & O2	5.2 (5.5)	4.7 (5.4)	4.4 (5.2)	4.0 (5.1)
T-Mobile & Orange	5.7 (6.0)	5.0 (5.7)	4.5 (5.4)	4.0 (5.1)
H3G	8.9 (8.9)	6.8 (7.5)	5.5 (6.7)	4.3 (5.9)

2.43 On 2 April 2009, the CAT issued its final ruling upholding the CC determination and remitting the 2007 MCT Statement back to Ofcom to revise the price control in accordance with the findings of the CC. On the same day, Ofcom published revised SMP service conditions following the CAT's decision.[25]

The changing market environment

2.44 The current charge controls end on the 31st March 2011. In advance of that date a new market review process needs to commence, we believe that this is an opportune time to review our broader policy approach.

2.45 While we believe that the current regime has performed well to date in promoting competition and benefiting consumers, we think it is the right time to consider whether there are better ways to regulate MCT. For example an approach that provides scope for more innovative pricing for both fixed and mobile services and which reduces, where possible, the regulatory burden placed on industry.

2.46 As discussed in the MSA I, published in August 2008, we believe that there will be increasing pressure on the mobile termination rate regime after 2011 arising from:

2.46.1 **Convergence.** There is increasing scope for technology to enable fixed and mobile networks to share some access, backhaul or core elements. One example of this type of technology is a femtocell, which enables a mobile access network to use a broadband service as backhaul. These technologies are likely to change much more quickly than the regulatory

[25] See: http://www.ofcom.org.uk/consult/condocs/mobile_call_term/statement/CTMAmendment2009final.pdf for further detail.

price-setting process; there is a risk that rapid changes in the way in which fixed and mobile networks operate may lead to unintended or distortionary effects of regulation, or worse, create obstacles to innovation;

2.46.2 **Competition.** Particularly given the emerging availability of spectrum as a result of digital switchover and further spectrum awards, we see the possibility of more (and more diverse) players in the market. If that occurs, deriving cost-based termination charges may be more difficult. For example, regulated prices are sometimes sensitive to chosen estimates of future demand. Making these calculations with more or more varied players becomes inherently more uncertain, increasing the risks of regulatory failure; and

2.46.3 **Regulatory burden**. Broadly speaking, each time we have set a regulated charge control for mobile services, the reduction in per-minute prices has been less than previously, as prices have converged on costs. At the same time, the time and effort involved in determining a regulated charge remains roughly constant, including the highly contested formal regulatory process and, potentially, litigation. Although the scale of the industry means that the benefits of getting termination prices right are significant, eventually this raises the question of whether there is an alternative approach that can achieve the same or better outcomes for consumers, more efficiently.

Our stakeholders perspectives on termination rates

2.47 In MSA I we asked stakeholders for their views on whether the current market review process and the structure of mobile termination regulation could be improved in any way.

2.48 In addition, the EC conducted a public consultation on its draft Recommendation and accompanying Explanatory Note on the regulatory treatment of fixed and mobile termination rates in the EU between 26 June and 10 September 2008.[26]

2.49 The responses of the 2G/3G MNOs to these consultations, although varying in many aspects have a number of factors in common. In particular they:

2.49.1 argue for symmetric mobile termination rates (MTRs) in the same national market, although they do not believe this should lead to a ‘one size fits all’ approach across the EU;

2.49.2 argue that MTRs and fixed termination rates (FTRs) should be separate, as there are *legitimate* cost differences between the two sectors. However this argument relies on the assumption that it is appropriate to recover some of the costs of the access network from termination in the case of mobile. In particular the MNOs argued that unlike a fixed network, where the cost of the access network is subscriber driven (i.e. each subscriber needs a line and a line card regardless of usage levels), a mobile network’s costs are driven by usage, as both spectrum and equipment is shared between subscribers and the amount required is driven by usage;

2.49.3 suggest that MTRs should include some provision for the recovery of fixed and common costs. Not doing so would lead to fixed or common costs being recovered in other less efficient ways, potentially to the detriment of

26 http://ec.europa.eu/information_society/policy/ecomm/library/public_consult/termination_rates/index_en.htm

consumers. It also ignores the fact that the recipient of the call benefits from being called; a termination regime which fails to recover costs from caller to the network (as well as a network's own subscribers) would lead to a situation where costs would have to be wholly recovered from the mobile network's own subscribers. This, they argue, would be economically inefficient.

2.50 BT and H3G (the only 3G only MNO) responded with very different perspectives on termination regulation:

2.50.1 H3G proposed that symmetric zero termination rates (Bill and Keep) are the best option for the future termination regime. Until this is introduced they argued that small or later market entrants should be allowed a higher termination rate. This is because H3G believes that incumbent networks have an incentive to engineer an on-net/off-net retail price differential at the retail level, in order to deter calls to competing networks. Smaller networks need to respond by setting their off-net prices at the same level as the larger networks on-net price. However this can be unprofitable if the on-net prices are below the level of the regulated MTR.

2.50.2 Furthermore, H3G argues that because smaller operators are 'forced' to offer low off-net call prices this leads to a large amount of off-net traffic and therefore a net outflow of traffic from the smaller network. If MTRs are symmetric, this disadvantages the smaller operator. H3G therefore argued that a move to Bill and Keep would prevent this transfer, but in the meantime smaller operators should receive higher MTRs to counter the impact of the outflows.

2.50.3 BT argued that current MTRs have been set a level that far exceeds the incremental costs of terminating calls, and fixed customers are, in effect, subsidising mobile customers. Furthermore BT argues that recent technological improvements in so-called "home zone" products allow mobile operators to terminate calls at cheaper fixed rates, within the customers home zone, which leads to arbitrage opportunities.

2.51 These stakeholder responses have informed our initial approach to reviewing mobile termination rates in this document and in the second MSA consultation.

The European context

2.52 The EC has also been considering taking a different approach to setting termination charges.

2.53 On 7th May, the EC published a Final Recommendation on termination. This proposal suggested adopting a revised version of the LRIC cost methodology currently used. The main difference from the current approach is that the EC suggest recovering elements of common costs not from termination, but from the competitive retail side of the mobile market. The impact of such an approach would be to reduce the headline rate of termination charges, particularly MCT charges, currently in place across the EU, potentially by a significant amount.[27]

[27] The ERG 'snap-shot' benchmark calculates the average EU mobile termination rate at 8.7 Euro cents. The EC's impact assessment presented to COCOM on 10th December 2008 suggested that if the EC's current proposed methodology were applied mobile termination rates would fall to around 2.5 Euro cents.

2.54 It is likely however that such a shift would also have an effect on mobile retail prices, as MNOs seek to recover costs no longer recoverable from call termination charges. The possible effects of this are considered further in section 6. In arriving at a decision on the best approach, Ofcom is required to take utmost account of the EC Recommendation.

Section 3

Market Definition

Summary

3.1 This section sets out our initial perspective on the relevant market for mobile call termination, based on the 2007 Market Review conclusions. Market definition follows well-established principles of competition policy and law and guidelines published by UK competition authorities (see *Office of Fair Trading Market Definition Guideline* [28]) and by European and US competition authorities (see the EC's Recommendation and the accompanying explanatory memorandum[29]). Market definition is not an end in itself. We define markets in order to test whether any party has SMP in a particular market.

3.2 In 2007, we identified the relevant market for mobile wholesale call termination to be wholesale mobile voice call termination provided to other Communications Providers (CPs) by MNO's in the United Kingdom. In this section, we discuss a few constraints (e.g. services and technologies) which, in 2007, had the potential to alter the proposed market definition but were, after careful consideration, judged to be insufficient to do so. We discuss more recent developments in the market for both those services/technologies considered in 2007 and new ones.

3.3 We also seek views from our stakeholders about whether our proposed market definition is still valid and, in particular, whether our description of the recent developments fully reflect the market reality.

Markets defined in 2007

3.4 In March 2007, we concluded that each MNO offered a wholesale voice call termination service that was unique. In other words, the service of one operator could not be replaced with the service of another (i.e. the services were not substitutable).

3.5 Therefore we defined the relevant markets as being each of the markets for wholesale voice call termination provided by *each* MNO to other CPs. [30] [31] This is consistent with the approach set out by EC in its Recommendation of markets susceptible to *ex-ante* regulation.[32]

3.6 We considered what alternatives (substitutes) existed to wholesale voice call termination at two levels. We considered substitution by CPs: What services might an operator regard as a substitute for an interconnection agreement that gives them

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[28] *"Understanding Competition Law", OFT 403*, December 2004 available at http://www.oft.gov.uk/advice_and_resources/resource_base/legal/competition-act-1998/publications

[29] *On Relevant Product and Service Markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communication networks and services*, public consultation on a draft EC recommendation, 28 June 2006, SEC(2006) 837, available at http://ec.europa.eu/information_society/policy/ecomm/doc/info_centre/public_consult/review/recommendation_final.pdf.

[30] 2007 MCT Statement. More precisely, the relevant markets were defined as: wholesale mobile voice call termination provided in the United Kingdom to other Communications Providers by (respectively): H3G, O2, Orange, T-Mobile and Vodafone.

[31] For the sake of clarity in the exposition, we will not always repeat the entire definition of the relevant market, but refer to it as (wholesale) call termination on each MNO's network.

[32] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:344:0065:0069:EN:PDF

wholesale voice call termination to a particular network? Given that wholesale voice call termination is a service that is used to meet consumers' demand for calls, we considered substitution by consumers: both callers and call recipients. For callers, what services might consumers regard as a substitute for being able to call someone using their mobile number? For call recipients, to what extent does the price of termination influence their choice of network?

3.7 Substitution by CPs would be a direct alternative to buying wholesale voice call termination. Substitution by consumers could affect MNOs' supply of call termination indirectly.

3.8 We considered retail services including calls to a second mobile, on-net calls, calls to fixed lines, emails, SMS, MMS, Instant Messenger, Voice over Internet Protocol (VoIP) calls and call-back arrangements. Wholesale services that we considered included call termination on a network other than the one of the called party. In each case, the critical question was: what constraint would be imposed on the price of wholesale voice call termination, if any, by substitution of that service for services that require wholesale voice call termination?

3.9 At each level, we considered substitution from the demand side, i.e., whether consumers or CPs considered the alternatives to be effective substitutes. We also considered substitution from the supply side, i.e. the extent to which CPs not operating in a termination market could (in response to price increases for termination) enter that market profitably and within a relatively short period.

3.10 None of the retail services we considered proved to be effective substitutes. Consumers did not view them as effective substitutes to mobile phone calls. Alternative suppliers could not break the monopoly of each MNO over call termination to their subscribers. Potential suppliers could not offer an equivalent retail service to calling an end-user on their mobile without relying on call termination services from the operator to which the end-user subscribed.

3.11 We also considered further issues that may affect consumers' substitution behaviour, such as the retail regime in place (i.e. how is the cost of a call shared between the calling and the called parties), and consumers' awareness of the relative costs of calls or of the nature (fixed, mobile or VoIP) or identity (which mobile network) of the number they are calling. We concluded that MCT charges did not influence consumers' choice of a network because these charges are only generally paid by *non*-subscribers to each network under the "calling party pays" regime.[33] Consumers also did not appear to be sufficiently aware of which specific network they are calling or of the differences in the cost of calling a mobile, be it from a mobile or from a fixed line.

3.12 Nor were any of the wholesale services we considered effective substitutes. Again, an operator has no choice but to purchase call termination from a given MNO if that operator is to offer calls to subscribers of that MNO. Other MNOs cannot supply such a service without the agreement of the network to which the called party is subscribed (as it is the case for roaming).

[33] MCT charges may affect the choice of a network for consumers that belong to so-called "closed user groups" or "social networks". These are defined as a group of consumers that routinely and frequently take turns to call each other (see Birke, D. and Swann, G. M. P. (2006), "Network Effects and the Choice of Mobile Phone Operator", *Journal of Evolutionary Economics*, 16, 65-84). To the extent that consumers within these networks care about termination charges (either because they care about the costs incurred by members of their "groups" or themselves if they will have to return calls), MCT charges may affect their behaviour.

3.13 At neither the retail nor the wholesale level was there compelling evidence to suggest that this was going to change during the relevant charge control period (that is, before March 2011).

3.14 We also considered whether the market should be narrower than calls to all of the numbers of subscribers of a single network – for example, is there a market for calls to an individual subscriber? We found that the way in which call termination is offered and purchased between networks means that call termination is typically offered to a network in a way that enables them to reach all of the customers of a given network at a single price, in a single agreement. All buyers of call termination are offered the same price (or set of prices).[34] Accordingly, in our 2007 MCT Statement, we rejected a narrower market definition.

3.15 Similarly, we considered whether the market should be wider than wholesale call termination, e.g. whether it should include other retail outbound services. While we acknowledged that from the consumer's side, MCT is part of a larger retail service bundle (e.g. including mobile subscription), we maintained that a change in the price of MCT by an MNO would not cause called parties to substitute that bundle (e.g. a subscription to that MNO) with bundles offered by other MNOs. As noted earlier, the "calling party pays" regime that prevailed then – and which still prevails – implies that a consumer's choice of a network is not generally influenced by MCT charges.

3.16 Finally, in the 2007 MCT Statement, we excluded from the market the supply of call termination by a network to itself (i.e. "on-net" termination). We were of the view that competitive conditions are likely to differ for on-net and off-net termination. MNOs do not have incentives to raise the price for on-net MCT. The reason is that this would amount to raising the retail price they charge their own customers for calls, which would make their own offers unattractive relative to other MNOs. In contrast, MNOs have strong incentives to raise the prices of off-net MCT as, by doing so, they would increase the retail prices charged by their competitors making their offers relatively unattractive. Furthermore, MNOs would not face material competitive constraints for doing so.

Developments since last review

3.17 Mobile markets have changed a great deal since 2007, and will continue to evolve in the period until March 2011. We include some initial views of some of those developments and what, if any, implications they might have for the relevant markets for wholesale voice call termination. We consider three broad types of development that may affect the market definition:

- Developments in the behaviour of callers: e.g., where callers would have the ability to substitute to alternative services that either have lower termination charges or bypass termination charges; these are mainly driven by emerging technologies.

- Developments on the side of call recipients: e.g. where recipients, rather than callers, would have to pay for termination; and

- Developments in the behaviour of originating CPs.

[34] An exception to this principle are calls to ported numbers, where the price for call termination was and has continued to be the price set by the network from whom the number has been ported, not the network on which the number now 'resides'.

Development in the behaviour of callers

Emerging technology and the termination bottleneck

3.18 In the MSA II document (which is to be published shortly) we have noted an emerging trend of network intelligence shifting towards applications and devices. Of particular note we highlight how:

- Mobile broadband and more capable mobile handsets trigger changes that make the mobile sector more complex. They enable new providers that offer diverse services, many of which are similar to those on the fixed internet, e.g. social networking sites like Facebook, MySpace, Twitter, instant messaging, VoIP and content downloads to supply mobile phone users.

- Many of those new providers seek a direct relationship with consumers, bypassing mobile 'portals' as delivery platforms and, sometimes, mobile bills (or prepaid credits) as payment mechanisms. By bypassing the control of in-coming (conventional) calls by the operator providing the mobile broadband service to the called party, these new services offers an alternative to calling an end-user by using his mobile number.

3.19 Nonetheless, at this stage we are not aware of products that allow callers to mobile numbers to avoid the termination charge.

Developments on the side of call recipients

Voice over IP

3.20 Mobile voice-over-Internet Protocol (or "VoIP") services use a broadband connection to enable voice communication (calls) between mobile subscribers.

3.21 We have said above that VoIP offers an alternative to calling end users via their mobile numbers. Furthermore, the regime for calls to mobile VoIP services may differ from the current "calling party pays" regime for voice calls to mobile as the caller and the called party each pays for their mobile broadband subscription but may or may not pay other charges for making or receiving a VoIP call (depending on their contract plans).

3.22 The implication of a regime where both the calling and the called party are charged for VoIP calls is that the costs of calls are shared between these two parties. Therefore, VoIP services may have different competitive characteristics from services that are solely charged on a "calling party network pays" basis, and might avoid some of the problems of existing voice call termination markets – notably the ability of network operators to exploit a monopoly over termination of calls to their subscribers.

3.23 We were aware that VoIP was in its infancy when we conducted the previous review, and it did not constrain our analysis. VoIP remains an emerging technology, but we hope that its potential to influence call termination markets has become clearer since then, and welcome all views on this subject.

Developments on the side of originating operators

3.24 There is increasing fixed-mobile technological convergence. A prominent example of fixed-mobile convergence product is BT Fusion where the same handset can function as a mobile phone but also roam onto a 'home hub' so that calls can be terminated using fixed infrastructure (i.e. fixed broadband). C&W is also proposing a service, which it describes as a telephony service that combines the benefits of fixed and mobile telephony. The customer can use a single mobile handset in the office that uses picocells operating over C&W's DECT[35] guard band spectrum[36] and is connected back into the customers' fixed line network. Away from the office the connectivity is provided over one of the existing mobile networks under a roaming agreement established between C&W and its partner operator.

3.25 The implication of these new developments is that the boundary between fixed and mobile services may be less pronounced. For example, if a mobile handset could function for a material amount of time as a fixed phone (and being subject to fixed termination charges), this could potentially constrain MCT charges.

Specific technologies and market definition

3.26 Four of the five MNOs in the UK have more than one network (e.g. both a 2G and 3G network). Our relevant market included mobile call termination on all networks operated by an operator. We observed that, in practice, operators generally did not distinguish between call termination on their different networks and, in particular, charged a single price or set of prices for call termination across both networks.[37]

3.27 Future networks (e.g., '4G') are also likely to be included in the relevant market although limits on the type and amount of spectrum available to support next-generation mobile networks will also affect the number of '4G' networks or network operators that are able to emerge in the UK. The appetite to invest will inevitably be influenced by the current business climate and access to credit.

Services other than voice termination not included in the March 2007 market definition

Short message services ("SMS")

3.28 In the 2007 MCT Statement we said that SMS was a limited substitute for calling a mobile.[38] We noted that some callers saw SMS as a cheaper option than making a call,[39] but we concluded that competition from SMS services did not constrain MCT charges sufficiently for these services to be included in the relevant market. In reaching this conclusion, we noted functional differences that limit the extent to which SMS is a close substitute for calling a mobile. Furthermore, it is the same terminating MNO that controls the SMS termination charge as the voice termination charge.

Other data services

3.29 Ofcom has not expressed detailed views about data services other than SMS as a competitive constraint on voice termination services.

[35] DECT - Digital Enhanced Cordless Telecommunications
[36] 1781.7-1785MHz paired with 1876.7-1880MHz
[37] In other words there was a common pricing constraint across both networks although, as we noted in 2007, technology could be developed in order to charge different prices depending on the termination network. Whether it would be economic to do so was less clear.
[38] This was discussed at paragraphs 3.101 to 3.105 of our March 2007 MCT Statement. SMS enables parties to exchange only relatively short messages (the number of characters in a message is limited) and SMS can be delayed, because, unlike a mobile voice call, an SMS is transferred between networks on a "store and forward" basis.
[39] See our March 2007 MCT Statement, at paragraph 3.102.

3.30 Mobile Instant Messaging, unified messaging services and ‘message clips’ (short voice or video message sent over the IP network) could also develop as a potential substitute for voice calls in the future.

3.31 Data services have developed considerably since the last review, and this development is likely to continue for the foreseeable future. We would be interested in any evidence about such developments.

Geographic markets

3.32 In the 2007 review, we considered that there was a unique UK-wide market as the main MNOs have national coverage and charge the same price for termination regardless of where the call comes from and of where in the UK the call is answered.

3.33 A new issue for this review is the emergence of MNOs offering services with limited geographic coverage. For example some providers offer mobile services in restricted neighbourhoods of urban areas. In terms of the impact on our proposed geographic market definition, a relevant consideration is whether termination charges will or should remain geographically uniform, or whether different MCT charges emerge in different geographical areas.

Question 3.1: Do you agree with our preliminary view on market definition? Has anything changed, or is anything likely to change within the period of the next review, which would materially impact on the definition of the market(s)?

Section 4

Assessment of Market Power

Summary

4.1 Section 3 presented our initial perspectives on the market(s) that may be relevant for the assessment of SMP. In this section we set out our thoughts on SMP.

4.2 As mentioned above, we concluded in our 2007 MCT Statement that each MNO had SMP in the relevant market. This conclusion was based on three main arguments discussed in this section; these are that:

- in each relevant market, there is one MNO that holds a 100% market share;
- there are significant barriers to entry; and
- no other CP has sufficient CBP so as to mitigate or remove each MNO's market power.

4.3 We set out below a brief summary of our view as it was in 2007, highlight developments since the 2007 MCT Statement, and note the potential importance of various technological developments in relation to SMP.

Market power

4.4 In the 2007 review each MNO was found to have SMP in the relevant market for terminating calls on its own network. In the 2007 MCT Statement[40] we found that:

- each MNO controls 100% of the market for wholesale voice call termination of calls to its subscribers;
- we did not foresee any changes to the 'calling party pays' (CPP) arrangements in UK mobile telecommunications, nor the introduction of new technologies that could allow competition in the supply of termination to an MNO's customers;
- There are significant barriers to entry. No MNO can (or would be able to in the event of a price increase) supply MCT to a called party without the agreement of the network to which the called party is subscribed.
- the combination of 100% market share and absolute barriers to entry created a strong presumption of market power; and
- we did not believe that fixed and mobile originating operators would have been able to exercise sufficient CBP to deter MNOs from setting inefficiently high charges for MCT.

Countervailing buyer power

4.5 The EC notes in its Explanatory Memorandum[41] that a market definition of call termination on individual networks:

[40] http://www.ofcom.org.uk/consult/condocs/mobile_call_term/statement/statement.pdf

"…*does not automatically mean that every network operator has SMP; this depends on the degree of any countervailing buyer power and other factors potentially limiting that market power*."

4.6 The presence of CBP is therefore an important factor in considering whether any SMP that exists is reduced or negated and therefore whether regulatory controls are necessary. In the last review we considered whether BT (as the major purchaser of MCT) had sufficient CBP to prevent an MNO from setting MCT charges that were unacceptably high.[42]

4.7 Our conclusion, see for example at paras 5.170 *et seq*. of the 2007 MCT Statement, was that:

- BT is an important outlet for all suppliers of MCT and is a well informed and price sensitive buyer, however;
- the absence of reciprocity in negotiations between BT and suppliers of MCT means that BT has significantly less CBP than would be the case in the presence of reciprocity, and;
- moreover, there are no alternative sources of supply and BT is unable to self supply;
- BT also faces a strong commercial incentive to purchase MCT (heightened by its CPS and IA obligations); and
- BT is subject to end-to-end obligation[43] and could not credibly threaten to refrain from buying termination from MNOs.

4.8 Regulatory controls also constrain the charges that BT can set for its own services, including charges for terminating mobile-to-fixed calls on its own network (which might otherwise be a negotiation tool for BT). They also require BT to offer wholesale origination services (which may affect its incentive to buy termination).

4.9 Ofcom also noted that no other purchasers of MCT (whether FNOs or MNOs) had sufficient CBP. There were no alternative sources of termination for calls to a given MNO's subscribers, and no originating operators were able to self supply. We believed that all FNOs and MNOs faced strong commercial pressure to purchase MCT (whether directly or through a transit provider). The absence of reciprocity in negotiations between FNOs and suppliers of MCT reduces the CBP of FNOs further (compared with purchasing MNOs).

Technological developments

4.10 In Section 3, we said that emerging technologies and VoIP had the potential to widen the market for wholesale MCT. If these technologies develop materially, they may have an impact on SMP in the market for wholesale MCT. In particular, if a

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[41] Explanatory Memorandum to the EC's Recommendation on Relevant Product and Service markets 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communication networks and services. Available at http://ec.europa.eu/information_society/topics/telecoms/regulatory/maindocs/documents/explanmemoen.pdf

[42] i.e. "appreciably above the competitive level" - see paragraph 5.31 of the March 2007 MCT Statement http://www.ofcom.org.uk/consult/condocs/mobile_call_term/statement/

[43] See Ofcom's Statement "End-to-end connectivity" published on 13 September 2006. Available at http://www.ofcom.org.uk/consult/condocs/end_to_end/statement

substantial proportion of subscribers receive calls via VoIP or social networks for which they have to pay, these subscribers' choice of network may be affected by MCT charges.[44] However, our current view is that such developments appear unlikely to have a significant effect on the market prior to 2015.

Question 4.1: Do you agree with our view? Or are there other developments, not considered elsewhere in this consultation document, for potentially removing the underlying causes of SMP?

[44] An end-user can always refuse to take a call made through VoIP or social networks if he does not want to pay for it. However, there may be instances where he would accept the call (e.g. where the caller is a student calling home).

Section 5

Potential Consumer Harm arising from SMP

Summary

5.1 Subject to further consideration of market definition and a full assessment of SMP, our view remains that, absent regulation, MNOs would have both the incentive and the ability to set excessive prices for MCT.

5.2 This section describes detrimental impacts in more detail. We consider these potential impacts under the following categories, namely:

- economic efficiency;
- competitive impacts; and
- distributional effects on consumers.

5.3 These general categories also form part of a set of criteria for assessing specific regulatory options,[45] and they are broadly consistent with those used in the 2007 MCT Statement.[46] In this chapter we confine the discussion to a comparison of no regulation of termination with regulating all mobile operators. Other considerations arise for the question of differential or asymmetric regulation between operators, but these are not the focus of this document.

Economic efficiency

5.4 The absence of regulation could produce a range of inefficient outcomes, to the detriment of consumers. Inefficiencies could be in the form of higher prices and/or distortions to markets that reduce overall economic benefits for consumers in less direct ways (e.g. by discouraging efficient investments).

Excessive prices for MCT

5.5 We believe that, in the absence of regulation, MNOs would have both the incentive and the ability to set excessive prices for MCT. Some academic literature has considered the issue of what MCT charges would prevail in the absence of regulation. While some papers suggest (especially for mobile to mobile calls) that MCT could be set at –or even below – (marginal) costs, they are generally inconclusive and heavily dependent on a various set of (sometimes different) assumptions.[47] [48]

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[45] Section 6 sets out the full range of options

[46] The 2007 MCT Statement identified several categories for detrimental impacts of excessive CTM charges. These were, broadly:

- excessive prices for consumers at the retail level;
- inefficient structure of prices and distortion of consumer choice;
- inequitable distributional effects; and
- a risk of anticompetitive behaviour.

[47] The results indeed depend on whether MNOs set their MCT charges cooperatively or unilaterally, the nature of retail competition (in particular the structure of prices), the extent of the waterbed effect

5.6 Before the introduction of price regulation, MCT charges were substantially above costs. For example, in December 1998, the CC concluded that:[49]

"*The charges introduced by Cellnet[50] and Vodafone in August 1998 are 22 per cent above the current benchmark[51] and 30 per cent above the benchmark for 1999/2000. We conclude that these charges operate against the public interest, and that they may be expected to operate against the public interest over the next three years.*"

5.7 In 2001, Oftel noted that the prices of calling BT Cellnet and Vodafone had fallen by approximately 33% since the introduction of charge controls in April 1999, and estimated that the controls would have saved UK consumers well in excess of £1billion over the three-year period they applied(1999/2000 to 2001/2002).[52]

5.8 Excessive MCT charges lead to consumer harm, as explained below.

Excessive prices overall

5.9 By setting excessive prices for MCT, MNOs would be able to earn excessive profits on termination, to the detriment of consumers. MCT is part of the cost base for an end-to-end retail call to a mobile. Therefore, it is likely that excessive MCT charges will lead to high prices for calls to mobiles at the retail level.

5.10 However, MNOs have argued that excessive MCT charges should not be a concern as any excess profit in MCT would be 'competed away' at the retail level through lower retail prices (e.g. lower prices for making calls or increased handset subsidies). This is known as the waterbed effect. [53]

5.11 We noted in the March 2007 MCT Statement that, to the extent that the waterbed effect is not complete (i.e. a £1 profit in MCT will result in less than £1 being passed on to end consumers in the form of retail price reductions), excessive profits on termination will not be fully 'competed away'.

(see below), the presence or absence of call externalities (see Section 6), etc. For an overview of this literature, see Armstrong (2002), "The Theory of Access Pricing and Interconnection", in *Handbook of Telecommunications Economics*, eds. Cave, M., Majumdar, S. and Vogelsang, I., North-Holland, and Armstrong and Wright (2008), "Mobile Call Termination", *Economic Journal*, (forthcoming), available at http://else.econ.ucl.ac.uk/papers/uploaded/255.pdf.

[48] See also the discussion on the "Deregulation" option in Section 6.

[49] Cellnet and Vodafone**,** Reports on references under section 13 of the Telecommunications Act 1984 on the charges made by Cellnet and Vodafone for terminating calls from fixed-line networks, December 1998. Part 1, Summary and conclusions, paragraph 1.11 (see: http://www.competition-commission.org.uk/rep_pub/reports/1999/fulltext/421c1.pdf)

[50] Now O2

[51] This benchmark is the "public interest benchmark of efficiently incurred costs of an operator assuming it had 25 per cent of the current and anticipated market"

[52] Review of the Price Control on Calls to Mobiles, A Consultative Document issued by the Director General of Telecommunications, February 2001

[53] The term "waterbed effect" is defined by Schiff, A. (2008),("The Waterbed Effect and Price Regulation", *Review of Network Economics*, 7(3), 392-414, available at http://www.rnejournal.com/artman2/uploads/1/schiff_RNE_sept08.pdf) as the effect whereby regulation of one price of a multi-product firm causes one or more of its unregulated prices to change as a result of the firm's profit-maximizing behaviour. For mobile telecommunications, the waterbed effect usually refers to the notion that profits on termination will not be retained by MNOs; instead they will be eroded by the competitive pressures of the market (e.g. in the form of handset subsidies, lower prices for other services such as subscription and outbound calls), thus mitigating or removing any negative impacts for consumers.

5.12 There is scarce evidence about the magnitude of the waterbed effect. Recent academic papers have reached mixed conclusions. Genakos and Valletti (2007)[54] looked at whether a reduction in MCT charges by regulation led to an increase in retail prices, and found that the waterbed effect is large, but not complete. Andersson and Hansen (2007)[55] looked at the effect of mobile-to-mobile termination charges on profits, and concluded that they could not reject the hypothesis that the waterbed effect is 100% complete.

5.13 We recognise that a significant waterbed effect is likely, given that retail competition in mobile services is strong, but we took the view in the March 2007 MCT Statement that it was unlikely to be complete. However, given the lack of conclusive evidence, Ofcom decided not to rely heavily on any assumption of an incomplete waterbed effect.

Inefficient structure of prices/ Distortion of consumer choice

5.14 Our concerns in relation to excessive termination charges are not limited to the prospect of excess profits for MNOs. We have concerns about inefficient price structures and distortions of consumer choice, even if the waterbed effect described above is complete. In section 6, we consider the impact of these inefficiencies and distortions against specific regulatory options. They are also relevant to whether the absence of regulation would be detrimental to consumers.

5.15 Excessive termination charges would lead to inefficient retail price structures. Broadly, calls to mobiles would be priced inefficiently high at the retail level to cover the wholesale termination charges MNOs could use termination revenue to subsidise other mobile services.

5.16 This would lead to too much use of mobile services and not enough use of fixed network services. Consumers would face too high a price for calling mobile networks and for other fixed services using MCT, whilst originating mobile call services would be priced too cheaply in relative terms. Therefore, Ofcom considers that consumer choices would be distorted between mobile and fixed calling due to distortions in the relative prices of fixed and mobile services that do not reflect the underlying resource costs. Even within mobile-to-mobile calls, excessive termination charges could create distortions. MTRs create a floor on the price of mobile-to-mobile calls between networks ("off-net" calls). Therefore, excessive termination charges could lead to much higher charges for off-net calls compared to on-net calls, and therefore a distortion in the choices of consumers between the two call types (with potential flow-on effects for competition).

Competitive impacts

5.17 The previous section noted that excessive MTRs would distort consumers' choices between fixed and mobile services. In the long run, this would mean that competition between fixed and mobile networks would be reduced, which would add to the detrimental effects of excessive MTRs on consumers.

5.18 The previous section also noted that excessive termination charges could lead to much higher charges for off-net calls compared to on-net calls This could create

[54] Genakos, C. and Valletti, T., (2007), "Testing the "Waterbed" Effect in Mobile Telephony", mimeo Paper No' CEPDP0827, available at http://cep.lse.ac.uk/pubs/download/dp0827.pdf.

[55] Andersson, K . and H ansen, B ., (2007), " Network C ompetition: E mpirical E vidence on M obile Termination Charges and Profitability", mimeo (version of 15 December 2007).

competitive distortions to the disadvantage of smaller networks, which again would be detrimental to consumers in the long run.

5.19 Chapter 6 expands on these issues as part of a more detailed discussion of competitive impacts in relation to specific forms of regulation.

Distributional effects on consumers

5.20 Termination charges can have important distributional effects. In Chapter 6 we discuss the potential for termination charges to influence:

- the structure of retail prices; and
- the level of termination rate has an impact on the membership and usage of mobile phones.

5.21 These issues are relevant to the prospect of excessive termination charges in the absence of regulation. For example, excessive termination charges might lead to high usage charges for mobile services, possibly offset by low (subsidised) subscription charges. This would unfairly disadvantage customers who make a lot of calls in favour of those that do not.

5.22 As another example, earlier in this chapter we discussed the potential distortion of retail prices between fixed and mobile services. This can also lead to unfair benefits for some consumers at the expense of others. In the 2007 MCT Statement we considered this issue in relation to the differential impact of excessive termination charges on each of:

fixed-only consumers (i.e. those not personally using mobile phones and living in households with fixed line phones);

mobile-only consumers (i.e. those personally using a mobile and living in a household without a fixed line phone); and

mobile-and-fixed consumers[56].

Question 5.1: What are likely to be the main sources of detriment to consumers of excessive termination rates in the period 2011 to 2015?

[56] See Section 7 and Annex 19 of the 2007 MCT Statement.

Section 6

Regulatory Remedies

Section Summary

6.1 This section considers six possible outcomes for the next MCT review; five of which explicitly consider the approach to regulating wholesale mobile call termination charges, through some form of charge control.

6.2 As highlighted in section 2, this section considers the pros and cons for each of the identified options. We hope this will stimulate a wider policy debate on how Ofcom's approach to regulating MCT should change in light of the evolution of mobile services in the UK. It also forms the start of our impact assessment on each of the options.

6.3 Determining what approach should be adopted for the period after March 2011 will involve weighing the relative merits of the various different approaches, in light of our statutory duties.

6.4 With the possible exception of deregulation, all of the options identified would likely lead to a reduction in mobile termination rates. It is clear that a number of the benefits we have identified for consumers would flow from lower rates, independent of the methodology adopted.

6.5 This raises a further critical strategic policy question; should we adopt a policy of reducing termination rates as far and as fast as we reasonably can, within the boundaries of sound economic policy and the legal framework, whilst recognising underlying cost differences between fixed and mobile networks. An objective of such a policy could be to allow greater flexibility at the retail level, facilitating innovation. However, adopting such an approach may have other consequences that would need careful consideration.

Question 6.1: Should our policy approach to regulating MCT change? For example, given the possible benefits, should we adopt a policy of reducing termination rates as far and fast as we reasonably can, within the boundaries of sound economic policy, and whilst recognising underlying cost differences? If our policy approach did change, what do you think are the relevant factors for us to consider in deciding on the best future policy to regulating MCT?

6.6 We have not yet reached any view about whether we should adopt such a strategy, but have identified some possible options, considered in more detail below. We would welcome comments on all options considered and on other potential options that should be considered, as well as on the broader question of our strategy to future regulation of MCT.

Approach to Regulation

Ofcom's duties

6.7 In assessing whether any of the approaches outlined would constitute an appropriate remedy and in assessing the appropriate level of any charge control we would take into consideration, amongst others, the following:

- Section 3 of the Act, which sets out Ofcom's general duties in carrying out its functions, to further the interests of citizens in relation to communications matters and of consumers in relevant markets, where appropriate by promoting competition.

- Section 4 of the Act sets out the Community obligations on Ofcom which flow from Article 8 of the Framework Directive. In considering which, if any, SMP services conditions to propose, we would take into account all of these obligations. In particular, we would consider the requirement to promote competition and to secure efficient and sustainable competition for the benefit of consumers.

- The Act (Sections 87-92), in particular Section 87(9) which provides that subject to satisfying the 'tests' in section 88, Ofcom may impose a charge control as an SMP condition;

- The European Commission's SMP Guidelines;[57]

- The European Commission's Recommendation on termination[58];

- The Access Guidelines published by Oftel in September 2002;[59]

- The revised European Regulators Group ("ERG") common position on the approach to appropriate remedies in the regulatory framework for electronic communications networks and services.[60]

6.8 In addition, Article 13 of the Access Directive imposes requirements on NRAs when setting charge controls as SMP conditions. If necessary, we will need to consider how alternative remedies (for example "bill and keep") might meet the requirements set out in Article 13 AD. In any event, while there may be some issues of compatibility of these approaches and the legal framework, we think it is worthwhile to consider the merits of alternative approaches (in terms of the impact on consumers), as part of the wider policy debate. If necessary, we would then turn to the question of whether the Framework easily enables their adoption.[61] We would welcome any comments on this.

Possible remedies to a finding of SMP

6.9 Following a finding of SMP, there are a range of remedies that a regulator might choose to apply. These include, but are not limited to:

- Transparency obligations;

- Access requirements;

- Non-discrimination requirements;

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[57] EC guidelines on market analysis and the assessment of SMP under the Community regulatory framework for electronic communications networks and services (2002/C 165/03).

[58] See http://ec.europa.eu/information_society/policy/ecomm/doc/implementation_enforcement/article_7/recom_term_rates_en.pdf

[59] http://www.ofcom.org.uk/static/archive/oftel/publications/ind_guidelines/acce0902.htm

[60] http://www.erg.eu.int/doc/meeting/erg_06_33_remedies_common_position_june_06.pdf

[61] The issue of interpretation of Article 13 AD is also subject to debate in the context of the review of the European Framework currently entering its final stages.

- Charge controls; and
- Accounting requirements

6.10 In general, previous market reviews of mobile call termination have imposed charge controls. We did so in the 2007 MCT Statement after finding that anything less intrusive would not prevent mobile operators from setting high termination rates that would harm consumers.

6.11 This next market review will consider whether this remains the case. We are open to the possibility that other regulatory remedies (for example requiring access and non-discrimination) are required instead of, or in addition to, charge controls.

6.12 This section does not consider these other remedies. With the exception of deregulation, this section focuses on the possible alternative approaches to setting a charge control. This is the subject of our first consultation because we consider that a potentially substantial shift in how we set charge controls for MCT could have a significant impact on both the industry and on consumers.

6.13 This consultation allows us (and those likely to be affected) to understand the options, their potential costs and benefits, and provides stakeholders the opportunity to provide input at an early stage in the market review process. Specific proposals for regulation, as well as on whom such regulation might apply, will form part of a subsequent consultation which will also consider market definition and SMP analysis in greater detail.

Better Regulation and impact assessment

6.14 In line with our *Better Policy Making Guidelines*, in identifying the options set out below, we have considered a wide range of options, including a deregulatory option.[62]

6.15 Annexes 5 to 10 to this Consultation set out a number of discrete pieces of economic or policy analysis we have undertaken over the last few months to inform ourselves of the possible pros and cons of the different approaches discussed here.

Options

6.16 We have identified six possible options for future termination regimes:

- *No regulation of mobile call termination.*[63] Within this option, we also consider a scenario where termination regulation is removed from both fixed and mobile operators;[64]
- *Long Run Incremental Cost + (LRIC+).* This is the status quo, with charge controls set broadly consistent with the approach taken in 2007 (and previously) and which allows for an element of fixed and common cost recovery;

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

[63] 'Regulation', in this context, means the imposing of an SMP condition. Call termination is governed by a variety of other rules relating to, for example, call routing consistent with the National Telephone Numbering Plan and so on, such conditions would still apply.

[64] This consultation is only concerned with possible approaches to regulation of mobile termination, Regulation of Fixed call termination is subject to consultation under the Fixed Narrowband Market Review and Network Charge Control consultations. However, it is appropriate to consider the impact on mobile call termination of a wider de-regulatory approach in this review.

- *Long Run Marginal Cost (LRMC).* This is essentially the approach recommended by the EC in its Recommendation. It includes no allowance for recovery of common (and fixed) costs.

- *Capacity Based Charges (CBC).* Under this approach termination charges would be set on the basis of the capacity required for terminating traffic. This changes the *structure* of prices, which are likely to be in the form of fixed monthly or annual (rather than per minute usage, which currently apply) charges for a given amount of capacity.

- *Mandated Reciprocity (potentially with fixed rates).* Mobile call termination charges could be set at the same level as fixed call termination (termed 'reciprocity'). This is broadly similar to the approach adopted in the US;[65] and

- *Mandated "Bill and Keep" (B&K).* No payments for termination – that is, termination charges are set at zero.

Analytical framework for assessing options

6.17 The right method for setting call termination charges is the one that produces the best outcomes for consumers.[66] There are a range of criteria that will help in assessing whether a particular approach is better overall than another. To help frame the debate on the options listed above, we have developed the following framework for our preliminary assessment.

- *Economic efficiency* – Does the option promote economic efficiency? This includes both a static assessment (i.e. whether consumers are likely to benefit in the short term from lower prices) and the impact that the various regimes may have on incentives to invest (and dynamic competition more generally);

- *Distributional effects on consumers* – Which consumers will be better off, and which worse off, as a result of adopting the option? While the overall impact on consumers is examined under the concept of economic efficiency, the different approaches might have some distributional effects, for example, between high and low usage mobile users;

- *Competitive impacts* – Does the option promote or harm competition among mobile operators? Will it affect competition between mobile and fixed operators and, if so, how?; and

- *Commercial and Regulatory consequences* – It is also relevant to consider the practical implications of adopting each option. This examines the other relevant impacts on the industry, such as, for example, the risk of regulatory failure and the burden of regulation.

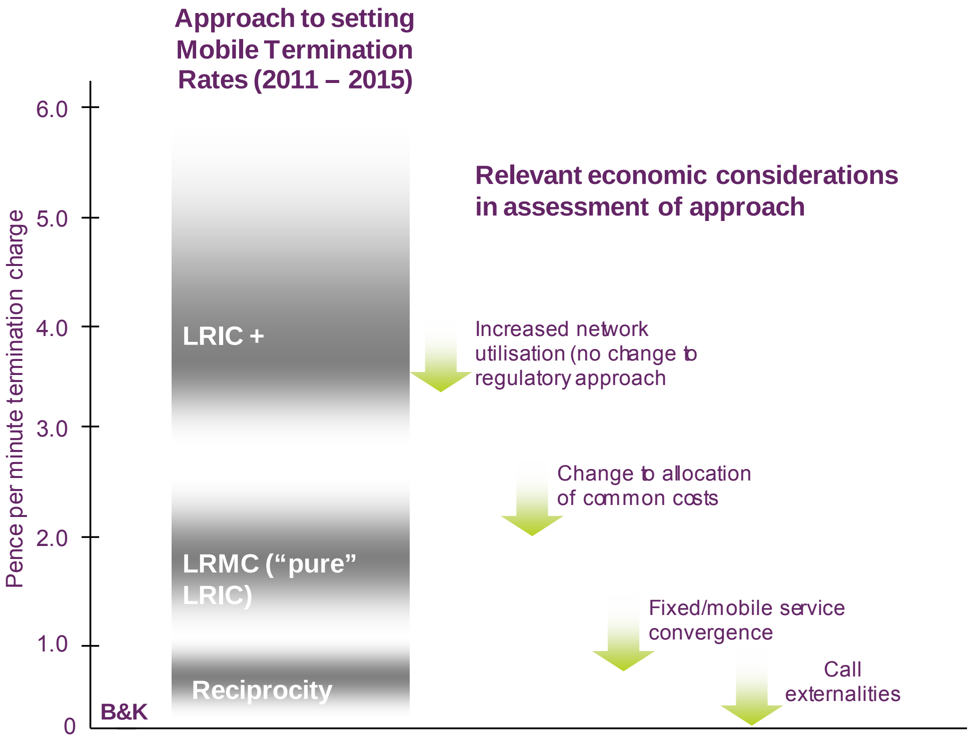
Consideration of economic efficiency

6.18 The graphic below illustrates the economic considerations that are most relevant when MCT charges are reduced. This is illustrative only but it helps illustrate the

[65] See annex 9 for further details.
[66] This impact needs to consider a number of different effects, and to consider all the facts in the round.

main expected effects of market changes (e.g. increased network utilisation) and methodological changes (e.g. change to allocation of common costs).

Figure 8 – Illustration of economic considerations as MCT charges reduce



Preliminary Considerations

6.19 The EC also believes that the existing regime for MCT may no longer be appropriate, in light of developments in the market. It has also stressed that there may be increased benefits to consumers from lower MCT charges.

6.20 On 7 May 2009, the EC adopted a Recommendation on call termination, setting out a method for regulating call termination which sets charges based on allowing only the recovery of costs (and a reasonable rate of return) directly incurred by providing call termination services. The biggest difference from the current regime would be that the recovery of common costs would no longer be included in calculating the termination charges. Many believe that this would significantly reduce the resulting cost-oriented termination charge.

6.21 As highlighted in Section 2 above (see paragraphs 2.52 to 2.54), we are required both to consider and take "utmost account" of the EC's Recommendation. We see our approach in this consultation (that is, to consider a wide range of possibilities, that includes a close examination of the EC's recommended approach) as consistent with meeting those duties and obligations under UK and EU regulatory law.

Summary of options

6.22 It is not clear that there is a single termination regime that is better than all the others under all circumstances and for all consumers. MNOs recover costs through setting MCT charges to callers and retail prices to their own subscribers. Any changes to the MCT charges will affect the balance of retail prices and cost recovery between these two sides.

6.23 The economic case for and against each of the candidate regimes is mixed, both in theory and in evidence. We have found that much of the evidence that might help guide our analysis is either difficult to obtain robustly or is open to more than one interpretation. For this reason, we have developed fresh evidence on some of the critical issues, in order to assist our analysis. That evidence is annexed to this consultation.[67] There is no consensus on the correct regime in the economic literature or among the academic commentators consulted (see the discussion later in this section and in the different annexes).[68]

6.24 Determining the best option will therefore depend on a range of factors. We have not yet settled on any one approach as the best option, and welcome stakeholder's views. However, based on the analysis and discussion to date (presented in greater detail below), we have the following observations.

6.25 While a deregulatory approach might appear attractive, there is a significant risk that it would be impractical in reality. Complete removal of *ex-ante* regulation would risk a breakdown in connectivity, meaning users of some networks would be no longer able to call users of another network, or a return to excessively high termination prices. We might credibly expect this approach to cause significant customer detriment, lead to a high volume of ongoing *ex-post* disputes or complaints and, in particular, to present a problem for new entrants who have less bargaining power.

6.26 If we concluded that deregulation was not a viable option, and that there was a lack of competition on termination markets, some form of regulation of termination rates may be necessary. We consider each of the five remaining options in turn.

LRIC+

6.27 LRIC+ (which is the system currently applied to both fixed and mobile termination) has in previous reviews been thought of as being a good proxy for efficiently set termination rates. However, its ability to continue to deliver an efficient outcome rests on a number of assumptions, which may be less robust in the future as the market continues to develop.

6.28 For example LRIC+ assumes that an equal share of common (and fixed) costs are recovered through a mark-up on linear termination prices (i.e. a mark-up on ppm charges). However, in practice, they may also be recovered from other types of charges (for example through fixed retail charges, such as bundles of call minutes). To the extent that this is possible, it may be more appropriate to recover common costs in this way, which may stimulate increased usage.

LRMC

6.29 LRMC may provide a more attractive approach to setting MCT charges, in that it removes the difficult element of common cost recovery from the calculation. While LRMC still suffers from some of the risks associated with LRIC+ charges (for example around detailed cost modelling), it would allow greater retail pricing flexibility

[67] A number of annexes to this consultation contain new evidence we have commissioned for this review or secondary evidence we have reviewed. For instance, Annex 7.2 presents some relevant consumer research we have commissioned for the UK market, while Annex 9 reviews the current retail offers available in the UK and the US markets.

[68] Annex 6 reviews the key empirical papers in this area. Annex 5 presents a cross-country econometric study we have commissioned from Professor Pesendorfer and CEG on the relationship between wholesale termination charges and take-up (and prices) once the other key determinants of take-up and prices are controlled for (Annex 10 discusses the data that have been used in the econometric study and in a number of recent economic studies in the area).

to mobile operators. For example operators would be able to offer greater variety of bundle sizes; the benefits of which are likely to be felt by consumers, who would be able to choose from a wider selection of tariffs.

CBC

6.30 A more fundamental shift in approach would be to recognise that costs are not mainly driven by minutes of traffic but by the capacity required to carry traffic. CBC might present an approach which more accurately, and efficiently, sets a wholesale charge which reflects the underlying cost structure for MCT. Furthermore, it might fit particularly well with NGNs and avoid some of the short-comings of current pence-per-minute based termination rates. However, there may be significant practical obstacles in implementing this approach.

Mandated reciprocity

6.31 Another option would be to adopt an approach which is not primarily based on a detailed assessment of the costs of the SMP operator, but that uses some other measure to set a price. A switch to mandated reciprocal charges, where each operator has the same termination charge irrespective of the underlying network or cost structure, would be one such approach. The obvious advantage of such an approach is its simplicity and transparency. It may also stimulate fixed and mobile convergence. However by definition, it would involve setting prices without knowing the underlying cost of providing the service in detail, thereby raising question marks in relation to recovery of efficiently incurred costs for mobile network operators from termination.

B&K

6.32 Finally, there is mandated B&K, which would effectively set the regulated termination charge at zero. This would be simple and transparent to administer, but like mandated reciprocity has the disadvantage that it fails to consider the underlying costs of providing the MCT service.

Question 6.2: Are there additional options (other than the six set out in this consultation) that we should consider? If so what are they and what advantages/disadvantages do they offer?

Wider impacts of a change in approach

6.33 The following section summarises some of the main issues under the criteria set out in our analytical framework. Issues around economic efficiency appear throughout this analysis, and are therefore not considered separately.

Consumer impacts

General effect of lower mobile termination rates

6.34 With the possible exception of deregulation, all the options considered are likely to lead to lower mobile termination rates (in terms of pence-per-minute).[69] The extent to which this occurs differs between the various options considered. However there are some general effects of lower termination rates that are common to all of the options.

[69] For LRIC+ this would simply arise because of the significant expected increases in data traffic (since the 2007 MCT Statement), reducing network unit costs.

6.35 Lower termination rates are likely to lead to an overall reduction in call usage charges, to the benefit of all consumers. Some re-balancing is likely (so that some charges may increase). For example, operators may decide to increase fixed retail charges (e.g., subscription charges) to compensate for lost call termination revenue. There are a number of ways in which operators may decide to achieve this (these are considered in greater detail in paragraphs 6.42 to 6.46 below).

Impact of retail price structures

6.36 There is some evidence that the retail price structure is influenced by the level (and potentially the structure) of wholesale charges and that this has an impact on penetration and usage.

6.37 First, there is some evidence that the level and structure of termination rates has an impact on the structure of retail prices. We have assessed, on a preliminary basis, the relationship between wholesale termination rates and retail plans in the UK. The main conclusions emerging from the analysis is that as termination rates declined:

- the difference in the level of on-net and off-net call charges appear to have declined. Today there are significantly fewer pre- and post-pay tariffs that have different call charges between on and off-net calls than a few years ago when termination rates were substantially higher (annex 9). Only 12% of respondents to our survey stated that inclusive minutes only apply to calls on the same network(annex 10.2); and

- fixed charges (that only apply to post-pay tariffs) appear to make up an increasing proportion of operators' revenues.

6.38 We also examined the mobile retail tariffs offered in the US where average termination rates are effectively set very close to zero (annex 9). Our review suggests that in the US most of the mobile revenues are raised via subscription fees with very high volume call bundles included. US operators, having the freedom to recover their costs either through subscription fees or usage charges, appear to have opted for the former. We also found that in the US there is (in broad terms) often little or no difference between on- and off-net call charges, since the inclusive minutes 'buckets' are so large that a per minute call charge applies to off-net calls only if consumption is particularly high.

6.39 Second, the level of termination rate may affect take-up and usage of mobile services. High termination rates tend to lead to a retail price structure with relatively high off-net call charges (since operators 'cover' their wholesale cost of each minute of a call with a corresponding retail charge) and lower subscription charges (since subscribers generate incoming calls that provide call termination revenue). This might imply market outcomes with a higher level of take-up (and/or multiple subscriptions) and lower usage per subscriber. Equally, if termination rates are low, consumers will tend to face higher subscription fees but lower or no charges to make (or receive) calls. This might be expected to lower take-up, but increase usage amongst those who do subscribe.

6.40 In our preliminary view, international comparisons provide evidence that this relationship between termination rates, and take-up and usage, exists. A simple analysis of cross-country data (annex 5) suggests that countries that have, broadly speaking, systems that adopt reciprocity or 'bill and keep'-like arrangements – US, Hong Kong and Singapore (and to a lesser degree Canada) – have higher usage than countries with 'Calling Party's Network Pays' regimes.[70]

6.41 This remains true even when we seek to take into account other factors affecting usage per capita in an econometric model (see discussion in annex 6 and annex 7).

Impact on retail charges

6.42 In the past, high termination rates have led to high off-net retail usage charges (i.e. ppm charges), relatively low fixed or subscription charges and often to differences between off-net and on-net call charges. As termination rates decline, we would expect any remaining differences between on- and off-net call charges to continue to shrink. All other things being equal, call charges are likely to become less important, though subscription fees or 'access' related charges (such as minimum top-ups) could become more important.[71]

6.43 Retail charges for other services, particularly for newer services such as data services may also be set at a higher rate than would otherwise have been the case. Charges for these services may also fall less quickly than they may have.

6.44 Some MNOs may also decide to seek to recover any shortfall in termination revenue by charging consumers to receive calls. This would clearly have a more significant impact on consumers with higher inbound call volumes. However, we think this is highly unlikely, given the likely consumer reaction.

6.45 Our survey results (see annex 10.2) suggest – perhaps unsurprisingly - that most people in the UK do not like the idea of paying to receive calls. When asked what would be their preferred option if we departed from the existing pricing structure the largest majority of prepay customers (88%) indicated that they would prefer an extra £10 added to average handset charges than to face call charges for receiving calls.

6.46 These survey results suggest that if a reduction in termination rates were to lead to an increase in subscribers' retail charges, this is likely to be in the form of reduced handset subsidies and/or higher subscription charges (possibly with additional inclusive minutes). We think this outcome, rather than charges for receiving calls, to be a more likely result in response to reductions in MCT charges.

Distributional Effects

6.47 Changing the level of termination charges is likely to affect retail charges in ways that produce 'winners' and 'losers' – that is, there are likely to be some distributional effects.

6.48 The net effect of the rebalancing of call and subscription charges would be likely to favour consumers that make more calls, against those that make fewer calls. This section sets out our preliminary views about the nature of these effects and their relevance to choosing an approach to setting termination rates.

6.49 For some customers, particularly low users, who do not make many calls, this effect could make them decide not to continue to have a mobile phone(s). We think the

[70] Note that none of these countries have a true regulated requirement for zero termination rates. 'Calling Party's Network Pays' (CNCP) is the approach where the originating operator pays the terminating operator to complete a call (as applies in the UK and all other EU markets). See section 2 paragraphs 2.7 to 2.12 for further explanation.
[71] A snapshot comparison of retail pricing structures in the UK and the US appears to support these expectations (see annex 9).

impact of this effect is real though the size of the effect is unclear. Industry claims of widespread negative impact need to be weighed against the evidence of widespread take-up and low barriers of affordability in the UK for mobile services.

6.50 To the extent that the impact is significant, this issue may be better addressed through alternative policy means rather than allowing termination rates to be higher than they would otherwise be - e.g. through broader consumer protection measures. For example, some form of mandatory social tariff to ensure that mobiles are affordable for low usage subscribers could be the best vehicle to achieve this objective more directly. We also note that according to an Anaysys Mason report that we commissioned (annex 8.1), it appears that the relevant regulatory authorities in countries where mobile termination rates are very low or zero – US, Hong Kong, Canada and Singapore – have not expressed concerns about distribution issues and the need for a mandatory social tariff.

Unwanted and Nuisance calls

6.51 Lower termination rates may also lead to an increase in the prevalence of nuisance and unwanted calls (SPAM). The Analysys Mason report (see annex 8.1) briefly discuss whether these concerns have played a role in countries with very low (or negative in the case of Hong Kong) termination rates such as the US, Canada, Hong Kong and Singapore. In general, these concerns have been addressed with policy tools other than regulation of call termination services (such as 'do not call' lists).

6.52 Therefore it may be that this issue is best addressed through alternative policy approaches. For example, one possibility would be to review the enforcement of the current telephone preference scheme.

Competition impacts

6.53 Significantly lower mobile termination rates may mean greater retail pricing flexibility for calls to mobiles and hence the potential for greater competition and diversity of consumer offerings, in call markets (e.g. the increasing inclusion of off-net mobile calls in call packages such that calls to mobiles might be increasingly seen as a substitute for calls to fixed numbers).

6.54 Smaller and more recent mobile entrants have argued for some time that current MCT charges are too high. They argue that the effect of this is that it is difficult for such smaller operators, with comparatively lower subscriber numbers, to compete effectively. The contention is that high termination rates lead to high retail prices for off-net mobile calls, and smaller networks may be expected to have a higher proportion of off-net calls than on-net calls, leading to a disadvantage. However, differences in on-net / off net prices are decreasing (off-net calls are increasingly included in monthly bundles) and the evidence for material problems is not clear cut in practice. In any event, lower termination charges would ameliorate these concerns.

6.55 Fixed operators also argue that the significant discrepancy in the magnitude of fixed and mobile termination charges may cause competitive distortions, despite the underlying cost methodologies being consistent. This is a complex question which depends on the extent to which consumers substitute fixed and mobile subscriptions,[72] and the extent to which differences in common cost recovery from wholesale termination have an impact on the costs to be recovered in retail markets. However, to the extent that this is of concern, lower termination rates improve the situation rather than make it worse.

[72] This is complicated further as such subscription also provides access to broadband data services

Commercial impacts

Shift in recovery of common costs

6.56 As termination charges fall, an increasing proportion of common costs will have to be recovered from services other than call termination – specifically, retail services offered to mobile subscribers such as voice or data services.

6.57 In our 2007 MCT Statement, under a LRIC+ approach we decided that common costs should be recovered on a basis very similar to that of an Equi-Proportional Mark-Up (EPMU) rule.[73] According to this rule common costs are allocated across all services (traffic and subscription) in proportion to the directly attributable costs of these services.

6.58 Ramsey pricing suggests that it is more efficient to recover a higher proportion of common costs from the most price inelastic services.[74] Therefore, if the demand for voice termination is more sensitive to price than other services (e.g. subscription), this might justify a relatively smaller allocation of common costs to termination than would be the case under EPMU (or a similar approach). This is covered in more detail under the discussion on LRIC+ below (see paragraphs 6.96 to 6.108.7).

Investment Incentives

6.59 Some approaches may affect operators' investment incentives. Taking the most extreme example of B&K, some critics have claimed that it encourages operators to hand over the calls at the earliest possible opportunity (so-called "hot-potato" routing). The concern therefore is that B&K creates insufficient incentives to invest in networks.

6.60 The strength of any such effect is difficult to quantify. In practice mobile networks are built to provide a range of services, including both origination and termination of voice calls and data traffic, and of these services only voice termination is subject to a charge control.

6.61 Analysys Mason (annex 8.1) discuss the opinion of regulators in the US, Canada, Hong Kong and Singapore on this issue. They conclude that to date the risk of underinvestment has not been of significant concern.

Other possible future market developments

6.62 Regulation needs to remain relevant if it is to remain effective. As described in our MSA consultations, we see scope for significant change in the mobile sector in the future.

6.63 Adopting an approach that enables maximum flexibility in retail prices, whilst ensuring the primary objectives of regulation are achieved, is likely to deliver the maximum benefit to consumers. Such an approach also helps to minimise the risk of unintended consequences. Allowing flexibility facilitates operators' ability to offer a broader range of tariffs to consumers based on the demand for services from consumers.

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[73] In fact, the result is slightly more conservative than EPMU, see annex 17 (paragraphs A17.1 to A17.6) of the 2007 CTM Statement for further details.

[74] Ramsey pricing principles suggest that if demand for a service is inelastic, an increase in the price of that service (e.g. as a result allocating a larger proportion of common costs) leads to only a relatively small decrease in demand. This suggests that in order to reduce allocative efficiencies common and fixed costs should be mostly recovered from services with (relatively) inelastic demands.

6.64 Three of the options considered (LRIC+, LRMC and mandated reciprocity) set termination charges for voice traffic and on a pence per minute basis. To the extent that in the future voice and per minute pricing become less relevant at the retail level, these remedies may be less attractive in the longer term; though setting MCT based on ppm charges may still be the best approach in the medium term given the practical difficulties of moving to a radically different approach (e.g. to CBC).

6.65 The current LRIC+ approach sets termination rates on the basis of an efficient mobile operator with UK-wide coverage. Other options considered – e.g. LRMC, CBC or mandated reciprocity - would also most likely set termination rates on a similar basis. However, with spectrum trading and liberalisation being rolled out in frequencies that could support mobile services, there are already some new entrants that do not intend to roll out services on a national basis and whose costs, therefore, may differ from those of a national operator.[75]

6.66 It is unclear whether this may be a significant concern in the long run. While it is true that costs may differ, it is also true that entrants have the potential advantage to choose to roll-out in more profitable areas (and perhaps rely on national roaming to provide national coverage). This potential concern about cost differences across operators is also likely to be less severe if we were to opt for remedies that set termination rates below the current ppm level – e.g. LRMC, CBC and mandated reciprocity, because termination revenue will make a much smaller contribution to overall cost recovery (in comparison with other services) for all operators.

6.67 Historically the boundaries between fixed and mobile technology have been clearly marked; this may cease to be the case in the future. To the extent that fixed and mobile technology and costs converge there may be less scope for setting separate rates on the basis of separate technology.

6.68 All these factors point to the need to undertake a full and transparent consultation with industry and consumers, to consider the best approach for regulation of mobile call termination from April 2011.

6.69 The following section considers each of the six options in greater detail.

Question 6.3: Do you agree with our preliminary views set out for each of the options? If not, what are the additional factors that we should take into consideration, and why are they relevant to our analysis?

Possible policy options for future termination regimes

Deregulation

Description

6.70 In general a market that is effectively competitive is likely to best meet the demands of consumers. In competitive unregulated markets, all players have the freedom to

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[75] See for example, Ofcom, *Dispute between Mapesbury Communications and T-Mobile about mobile termination rates*, 13 February 2009, available at http://www.ofcom.org.uk/bulletins/comp_bull_ccases/closed_all/cw_01000 and Ofcom Dispute between Cable & Wireless and T-Mobile about termination rates (preliminary), available at http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ocases/open_all/cw_01004/.

negotiate different wholesale agreements dependent on their commercial interests and are able to reflect this in their approach to retail price levels and structures.

6.71 It is possible for interconnection arrangements to work effectively – for operators and for consumers – without regulation. The Internet is a good example of how a completely unregulated interconnection regime can evolve.[76] In some cases interconnection charges among Internet Service Providers (ISPs) are set at zero; for example between large ISPs with balanced traffic (this might be referred to as "peering"). Peering allows both parties to save transaction costs. Even when rates are not negotiated at zero, ISPs have the freedom to negotiate rates bilaterally, enabling different regimes to emerge between different pairs of ISPs, taking into account the unbalanced nature of traffic, the different negotiating strengths and the different degree of connectivity offered.

6.72 Adopting a similar approach to fixed and mobile termination regulation would allow scope for mobile operators to set termination rates commercially and have significantly greater flexibility over how to structure their wholesale charges and retail price structures and levels.

6.73 On this basis, deregulation might seem an attractive option, even though regulators around the world have typically not taken this approach. Deregulation would also only be an option if we found that either no MNO had SMP in any relevant market or that rules other than price controls would be appropriate to remedy any finding of SMP.

6.74 There are a number of variations in how a deregulatory approach could be adopted. The first would be to de-regulate mobile termination regulation only. A second possible variant would be to step away from any form of regulation for termination services, which would cover both fixed and mobile services.

6.75 The removal of regulatory regimes from both fixed and mobile services would provide a consistent approach, and allow negotiations between all operators. However, the fixed termination regime is subject to a separate consultation process,[77] which is outside the scope of this consultation. Nevertheless we think it worth considering, in a broader sense, the possibility of stepping back from termination regulation more fully.

6.76 In some of the economic literature, the further possibility of requiring that rates, agreed commercially, are set reciprocally is suggested.[78] In this case each operator would be free to negotiate individually, with only the constraint that the rates agreed were applied reciprocally on a bilateral basis. We have not developed our thinking on this approach further here, but welcome stakeholders views on whether such an approach would be viable.

Deregulation of mobile call termination

6.77 If we took no further action, then in March 2011 the existing charge controls would expire. Completing calls to mobile numbers would be unregulated, with mobile

[76] Note that we have undertaken no SMP analysis for the players in these markets so it is not clear to what extent these results would provide relevant guidance for markets with players who have SMP.

[77] The fixed termination regime is being considered as part of the Wholesale Narrowband Market Review and Network Charge Control consultation, ending on 28 May.

[78] Cambini C. and Valletti T. (2008), "Information Exchange and Competition in Communications Networks", *Journal of Industrial Economics*, 56, 707-728 and Laffont, J.J., Rey, P. and Tirole, J. (1998), "Network competition I - Overview and non discriminatory pricing", *RAND Journal of Economics*, 29, 1-37.

operators free to agree whatever terms they wished to complete calls. It is currently not clear that this would result in an economically efficient outcome:

- in some cases pairs of originating and terminating operators may not reach commercial agreement. This might lead to a breakdown in connectivity, with some consumers unable to reach all numbers;

- and even if the parties reached commercial agreement this may not be in the interest of consumers,[79] as:

    - rates may be set too high; or

    - the party with market power may set it high to exclude entrants or smaller players.

6.78 Deregulating mobile termination, whilst continuing to regulate fixed termination, may lead to a significant distortion between mobile and fixed operators, significantly favouring mobile providers. Mobile operators could purchase fixed termination at a regulated price, but would have no obligation to sell termination on the same basis. This is unlikely to be a positive outcome for consumers, who we might expect to bear the higher termination charges in the form of higher retail charges to call mobile phones.

6.79 The market evidence seems to be consistent with this concern. Mobile termination rates were high, especially the rates charged by O2 (then Cellnet) and Vodafone, prior to Oftel intervention and the reference to the Monopolies and Mergers Commission (MMC – now the CC) in 1999.[80] This was largely due to the fact that mobile operators could set their rates unilaterally, while the rates charged by BT and other fixed operators were under price control obligations.

6.80 The potential for competitive distortions to arise between FNOs and MNOs in this case would need careful consideration, not least because we would expect competition between FNOS and MNOs to become increasingly important in the future, as convergence becomes an increasing reality.

Deregulation of all termination regulation

6.81 If all call termination rules were removed, then fixed and mobile operators would be free to negotiate prices on a bilateral basis.

6.82 It is difficult to establish in a robust way whether the sort of 'stable but unregulated' state we see in, for example, internet interconnection, could emerge from regulated systems like telephony. For example, no clear picture emerges from the economic literature or the available evidence as to whether unregulated rates would be set below or above cost.[81] The literature also raises the risk that larger networks may still engage in foreclosure strategies. This could lead to some operators being excluded

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[79] According to a number of recent economic papers, any outcome is possible if the market is deregulated depending on the way networks compete at the retail level. In some cases, such as Internet peering it seems that an unregulated outcome could lead to B&K solutions if the traffic and the level of connectivity is balanced. Hence, while deregulation may work it is also possible that it may not and hence there will be a risk associated with deregulation.

[80] MMC, *Cellnet and Vodafone: Reports on references under section 13 of the Telecommunications Act 1984 on the charges made by Cellnet and Vodafone for terminating calls from fixed-line networks*, 21 01 1999, available at http://www.competition-commission.org.uk/rep_pub/reports/1999/421cellnet.htm#full.

[81] See annexes, in particular annexes 5 and 6, for further detail on this debate.

and/or increase the risk of connectivity breakdown, and seems particularly likely when networks are of different sizes (there is at least one example where this is claimed to have happened in practice).[82]

6.83 Smaller networks may be put at a disadvantage if larger networks set high termination rates. This will feed into high off-net call charges that represent the majority of calls for new entrants, putting them at a disadvantage in attracting subscribers. We think this might be of particular concern for new entrants, creating a barrier to entry.

Preliminary Assessment

6.84 Our current view is that deregulating only mobile termination is very unlikely to result in mobile termination rates that benefit consumers. In some cases the parties may not reach commercial agreement, potentially leading to a breakdown in connectivity. And even where parties reach a commercial agreement, it may not be in the interests of consumers, as rates might still be too high.

6.85 Both past experience and economic theory point to mobile termination rates being set too high under such circumstances. We are not aware of any countries that currently do not regulate the setting of mobile termination rates.[83]

6.86 Complete deregulation of termination is likely to carry similar types of risk, and may have an even greater impact on consumers. For example, it is likely to feed into higher off-net call charges, which would have a disproportionately greater effect on new entrants (fixed and mobile), putting them at a disadvantage in attracting subscribers.

6.87 Deregulation could reduce the *ex ante* regulatory burden, both in terms of the cost of regulation on industry and the regulatory authority. Although *ex-ante* periodic reviews of mobile termination markets are resource intensive both to us and to stakeholders, we believe that the benefits to consumers significantly outweigh the costs of setting regulation.

6.88 Ofcom would still have the power to apply the Competition Act 1998 and/or resolve disputes under the Act, in order to ensure that competition law is complied with and that the terms of the commercial agreement are fair and reasonable. If deregulation succeeded, intervention by Ofcom under the above powers would be expected to occur less frequently.

6.89 However, reliance on *ex post* competition law has a number of disadvantages.[84] The principles of competition law, as they can be derived from the statute and existing case law, do not always provide ready-made solutions to the problems experienced in telecoms markets. While competition law can, where necessary, incorporate such highly technical matters, there is nonetheless a practical case for addressing such issues through sector rules.

6.90 Reliance on *ex post* competition law may not allow for the certainty of intervention that is necessary to give all parties (including MNOs and FNOs) the confidence to plan their businesses and make significant investments within a clear and predictable regulatory environment.

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[82] This seems to be the case of entrants into the Turkish mobile market. See Calzada, J. and Valletti, T. (2008), “Network competition and entry deterrence”, *Economic Journal*, 118, 1223-1244.
[83] However, Hong Kong deregulated both mobile and fixed termination in April 2009 (see annex 8.1).
[84] The 2007 MCT Statement discusses this is detail, see Section 8 (in particular paragraphs 8.36 to 8.40).

6.91 Additionally, without the imposition of *ex ante* regulation actively to promote the development of competition in markets in which competition is not effective, it is unlikely that *ex post* general competition law powers would be sufficient to ensure that effective competition became established.

6.92 In the event of a failure to agree terms commercially, operators are likely to refer the issue to us under our duty to resolve disputes. All parties taking part in negotiations would be aware of this power and will take this into account in developing their negotiation strategies.

6.93 As a result, it is possible that intervention under full deregulation may, in practice, not be less frequent as intervention under the current regulatory regime. *Ex post* intervention may occur more often, if negotiations regularly fail. This may simply amount to a shift of the regulatory burden from *ex ante* to *ex post*.

6.94 This is not to say that a deregulatory approach will never be appropriate. If it were possible to remove or reduce the risk of market failure, and increase effective competition in the market, a deregulatory approach may be able to deliver significant benefits to consumers.

Question 6.4: Do you agree with our preliminary view of the de-regulatory option? If not, what are the additional factors that we should take into consideration, and why are they relevant to our analysis?

6.95 The following three options consider approaches that would set MCT charges based on a calculation by the regulator of the costs of providing call termination. We start with the LRIC+ approach, which is the approach currently adopted by many regulators (including Ofcom) to set call termination charges, particularly in Europe.

Long –Run incremental Cost Plus (LRIC+)

Description

6.96 A LRIC+ methodology allows operators to set charges that recover the incremental costs of providing termination (LRIC) and contribute to the recovery of common costs (plus). In practice, fully allocated cost (FAC) has sometimes been used as a reasonable proxy for LRIC+.

6.97 LRIC+ represents the *status quo*. It is a well understood and reliable economic methodology with a proven track record, which has been employed several times and upheld on appeal. It has also been the approach that we have followed to regulate MCT in the UK for several years.[85]

6.98 We believe that LRIC+ has delivered good results for consumers, in that it has constrained UK termination charges, which were previously set at very high levels. For example, MTRs have reduced significantly over the period in which this methodology has been applied – from over 12ppm to less than 6ppm today.

6.99 However, this methodology does have some limitations, some of which have become more evident in setting MCT charges. These include, the reduction of pricing flexibility imposed by LRIC+ on mobile network operators, the risk of regulatory error

[85] LRIC+ is also used to set regulated prices for other services, such as BT's network charge controls, leased lines and wholesale access products, such as WLR and LLU supplied by BT to other fixed operators.

(setting LRIC+ price controls is subject to some uncertainty) and the regulatory burden imposed on stakeholders.

Preliminary Assessment

6.100 LRIC+ has the problem that the structure of MCT prices of pence per minute does not properly reflect the underlying cost structure of mobile networks as costs are less driven by minutes of traffic, and more by the capacity required to carry that traffic.[86] As LRIC+ is an average cost pricing methodology it may increasingly lead to retail pricing structures that do not fully reflect the underlying costs of the network.

6.101 Linked to this, LRIC+ also leads to higher (relative to the other options examined here) termination rates for mobiles, which may constrain retail price flexibility. This is because high wholesale termination rates have traditionally fed through into high off-net retail call rates. For example, mobile (and fixed) operators may have less flexibility to offer flat-rate tariffs or all-inclusive call bundles which include mobile calls (for fixed consumers) or off-net mobile calls (for mobile consumers). To the extent that such tariffs are demanded by consumers and better reflect the underlying cost structure of the networks, consumers may not benefit as much as they might under this approach.

6.102 Secondly, LRIC+ requires us to make a number of decisions that are judgements of methodology, rather than simply determining facts – for example, around the allocation of common costs. These decisions are not clear cut and require a number of assumptions. There is therefore a risk of error (and dispute) inherent in making these decisions.

6.103 Finally, the current system for setting mobile termination rates imposes a significant regulatory burden on stakeholders. These costs may be small compared to the size of potential consumer detriment but are not insignificant. Furthermore, the degree of litigation related to mobile call termination has been significant, which add to the regulatory cost. It is unclear however, whether and to what extent the outcome would differ under the other options considered in this consultation.

Common cost recovery

6.104 LRIC+ is an average pricing methodology. This means that it includes not only those costs that are directly attributable to the provision of termination, but also a proportion of common costs that are common across the provision of range of services. The proportion of common costs to be recovered from termination is usually set according to an EPMU rule.[87]

6.105 The amount of common cost recovery included in mobile termination rates set on a LRIC+ basis has been subject to debate, including extensive discussion of Ramsey pricing principles which require that common cost mark-ups on termination reflect the market price elasticity of demand for termination. Given the significant challenge in obtaining reliable estimates of such elasticities and the high degree of uncertainty associated with such estimates, our current LRIC+ methodology is not based on Ramsey pricing. Rather, common costs are allocated by using service routing factors in the cost model.

[86] The incremental cost of carrying traffic on modern switches (so-called "softswitches") is very low. This is not the case for traditional switches.

[87] Note that this imposes a cap on the recovery of common costs from termination, but not from retail services as these are not subject to price controls. Also, the result of the 2007 control is slightly more conservative that EPMU. Annex 17 (paragraphs A17.1 to A17.6) of the 2007 MCT Statement discusses this further.

6.106 The LRIC+ approach implicitly assumes that the proportion of common (and fixed) costs that should be recovered from termination will be solely recovered through a mark-up on linear charges (i.e., pence per minute termination charges). However, in principle, common (and fixed) costs could also be recovered through fixed charges (i.e. not in relation to the number of minutes actually used). As discussed below, this is what CBC attempts to do.

6.107 Furthermore, it is not necessarily most efficient to "equally" allocate common costs across termination and other services. To the extent that we identify network services for which demand is relatively inelastic compared to termination, it would be more efficient to allocate a smaller proportion of common costs to termination and a greater proportion to more inelastic services. To the extent that this is feasible, it would be more economically efficient to do this, and as a result termination charges would be lower (if more elastic), or higher (if more inelastic).

Other assumptions under a LRIC+ approach

6.108 The LRIC+ approach also rests on a number of other assumptions, which in the future as markets continue to develop, may become less robust.

6.108.1 It assumes that there are no uninternalised call externalities. As discussed later in this section under B&K, call externalities refer to the fact that call recipients are likely to value being called and that this may not be taken into account by callers facing retail charges set under a LRIC+ approach for MCT. If these were important, termination rates should be marked down to reflect them.

6.108.2 It also implicitly assumes that termination rates set using LRIC+ would not lead to competitive distortions between mobile operators and, separately, between fixed and mobile operators.

6.108.3 For example, if the level of mobile termination rates under LRIC+ leads to a mobile retail tariff structure with significant on-net and off-net differentials, this could create competitive distortions to the disadvantage of smaller networks. To the extent that this may lead to some mobile operators being forced to exit the market or becoming marginalised, an approach that leads to high mobile termination rates (and on-net/off-net differentials) may be undesirable. Annex 9 suggests however, that there is limited evidence in the UK of such differentials, though they were substantial in the past and remain substantial in other European countries.

6.108.4 Provided that the methodology allows for similar proportional mark-ups on both mobile and fixed termination (ppm) rates to recover common costs. This consistency of approach should mean that competitive distortions do not necessarily arise. However, while the *proportion* of common costs recovered from fixed and mobile may be similar, the *magnitude* of common costs in absolute terms is greater for mobile than for fixed.

6.108.5 If the absolute amount (ie £) per subscriber – or the "bounty" - raised by mark-ups over marginal cost is different between operators, then the operator in receipt of a smaller bounty has a competitive disadvantage. This is because it has less ability to offer lower prices in order to attract that subscriber, even if it is equally efficient. This effect may cause a distortion in some cases.

6.108.6 Finally, LRIC+ also assumes that there is a clear distinction between what is defined as a 'mobile' service and a 'fixed' service. Service convergence and technological developments are blurring these lines, and these developments are likely to happen more quickly than regulatory price setting.

6.108.7 These are all factors that potentially impact the longer term suitability of the current LRIC+ approach that has been the best approach in the past.

Question 6.5: Do you agree with our preliminary view of the LRIC+ option? If not, what are the additional factors that we should take into consideration, and why are they relevant to our analysis?

Long-Run Marginal Cost (LRMC)[88]

Description

6.109 Like the LRIC+ approach described above, LRMC is a cost based methodology that could be used to set termination rates. LRMC is effectively the approach advocated in the EC's Recommendation[89].

6.110 In principle, LRMC is a well understood methodology, which if applied to mobile termination would likely result in lower (per minute) termination charges than those under a LRIC+ approach.[90]

6.111 There are two main differences between the two approaches. Firstly the size of the increment, LRMC typically considers a much smaller output (volume) increment and secondly the recovery of common costs, a contribution to which is not made under an LRMC approach. [91]

6.112 In past mobile termination reviews (when applying LRIC+) we have considered a large increment (i.e. all traffic demand, inclusive of both termination that was self-supplied and that that was supplied to third parties). Under LRMC the increment considered is likely to be smaller, for example it may be only the cost of the capacity needed to supply termination to third parties (i.e. excluding self-supply) as suggested by the EC. LRMC would also exclude an allocation for common cost recovery.

6.113 The combination of these factors is likely to lead to lower regulated MCT charges.

Preliminary Assessment

6.114 LRMC may be an appropriate methodology to set termination rates for a number of reasons.

6.114.1 Common costs would no longer be recovered from the regulated termination service but would instead be recovered from retail services.

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[88] LRMC might be considered as similar to "pure LRIC", which is how the EC has chosen to refer to its preferred approach set out in its Recommendation on termination (EC C(2009) 3359).
[89] The Federal Communication Commission (FCC) has recently issued a consultation document suggesting the adoption of a similar methodology to calculate termination rates (see Annex 8.2).
[90] The precise extent of any reduction is difficult to predict at this stage, without further analysis.
[91] Charges on the basis of Short Run Marginal Costs (SRMC) are likely to be highly volatile. This is unlikely to provide efficient price signals for either purchasing network operators or terminating network operators.

6.114.2 It would most likely lead to a reduction, if not elimination, of the on/off-net differential in mobile call charges, addressing any potential concerns about competitive distortions between mobile operators arising from this issue.

6.114.3 A reduction in mobile termination rates would reduce the absolute difference between fixed and mobile termination rates. This would be more consistent with the anticipated general direction of travel over the longer term, and provide industry greater flexibility to adapt to ongoing market developments (e.g., fixed / mobile convergence).

6.114.4 It would also remove potential concerns about competitive distortions between fixed and mobile operators that are related to common cost recovery.

6.114.5 And finally, as termination charges feed into retail call charges, we would expect lower termination rates to lead to increased operators' retail pricing flexibility, ultimately benefiting consumers.

6.115 However, as with LRIC+, an LRMC approach has some potential drawbacks. It suffers from some of the same issues as LRIC+ in that there is a risk of regulatory failure (in setting inaccurate rates). It takes significant time and effort to implement and will likely become increasingly difficult to sustain as more players enter the market, especially as the definition of fixed and mobile services becomes increasingly blurred.

6.116 The risk of regulatory failure might in fact be higher than for LRIC+, as estimating LRMC could perhaps be more difficult, because it would require an estimate of the cost implications of a specific sub-set of overall network demand. This may give rise to complex network planning concepts and assumptions that have not been previously considered (in the past we have modelled all network service traffic collectively). The regulatory burden might also be higher as the current LRIC+ approach has been extensively debated with stakeholders.

6.117 There may also be issues relating to consistency of regulatory approach. LRIC+ is the 'standard' cost methodology applied in setting charge controls for many other services. Departing from LRIC+ for MCT only would require sufficient justification.[92]

6.118 Finally, as noted elsewhere (see in particular paragraphs 6.36 to 6.41), lower termination rates are likely to shift the balance from retail usage charges to retail fixed charges (e.g., subscription charges), benefiting higher usage consumers but meaning lower usage consumers are worse off (in some cases, potentially to the extent that they may choose to leave the network).

6.119 While not insurmountable, such issues would need to be taken into account when taking a decision to move to a LRMC approach.

Question 6.6: Do you agree with our preliminary view of the LRMC option? If not, what are the additional factors that we should take into consideration, and why are they relevant to our analysis? In addition what do you expect the costs of a move to this option to be?

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[92] It may be worth emphasising that while LRMC may be appropriate for termination, it may not be for other one-way rather than two-way access services to which LRIC+ is currently applied – e.g. LLU, CPS WLR.

Capacity-Based Charges (CBC)

Description

6.120 Regulation often seeks to reflect, as much as possible, the outcomes that might be expected in a competitive market. A move to CBC, which in some respects resembles the pricing that is observed in the unregulated internet interconnection market, may be a step in that direction.

6.121 Under this approach termination charges would be set for specified network capacity (for example, on a monthly or annual basis) and would not depend on use, unless specific costs varied with use. The overall level of termination costs may not vary much from those calculated on the basis of either a LRIC+ or LRMC methodology, but the structure of charges would be very different under capacity-based charges. We think that CBC may better reflect the underlying causes of costs (upstream) and may also align better with retail price structures (downstream).

6.122 Upstream, a capacity-based charge better reflects cost causation because relevant costs are typically driven by an increase in demand for capacity, for example from a wholesale purchaser, to enable the termination of expected call traffic. The cost to provide such capacity is generally uneven, and will be increasingly so as technology develops. Downstream, retail packages are increasingly moving to flat-rate packages.

6.123 A CBC approach could also separate capacity and usage elements of the charge. A usage-based component of charge (ppm) may still be set, if appropriate, but most likely would be significantly lower (possibly even zero) than under LRIC+ and LRMC. Operators would choose the amount of capacity to purchase and would be able to send as many minutes of termination as can be accommodated with that capacity. If this capacity is exceeded, the operator would, depending on the arrangements, either need to purchase more capacity from the provider or buy more capacity from third parties that have already acquired capacity and may be willing to sublease it.

6.124 Some commentators have argued that once the charges for a specified long term capacity are set, a secondary market may develop where operators who have a short term surplus of capacity may sell it to those who demand it.[93]

Preliminary Assessment

6.125 A CBC approach is likely to result in a more economically efficient structure of wholesale charges and, ultimately, be more in line with efficient downstream price structures, avoiding the need to “convert” prices into volume-based ppm rates at the intermediate stage of interconnection. It may also be more in line with a move to a service agnostic NGN architecture, and therefore be more ‘future-proof’.

6.126 To the extent that NGN technology increasingly causes network costs to be more fixed than variable with respect to traffic, the CBC approach is more likely to be consistent with the NGN cost structure (See annex 8.2). Therefore, an advantage of CBC is that it would allow interconnecting operators to purchase capacity for whichever services they wish to supply.

[93] See Kennet, D.M. and Ralph, E., (2007), “Efficient Interconnection Charges and Capacity-Based Pricing”, *International Economics and Economic Policy*, 4(2), 135-158.

6.127 CBC pricing structures are not without precedent. Flat Rate Interconnection Access Call Origination (FRIACO), a wholesale dial-up internet product, was designed with capacity based charging principles in mind. There are other examples in Spain and Canada of this approach being implemented.

6.128 In some cases it may be that CBC leads to commercially negotiated arrangements, for example, B&K rates between similar sized operators with balanced demand for capacity. By reaching such an arrangement, operators would avoid incurring transaction costs (such as detailed measurement of interconnection traffic, negotiating and settling billing).

6.129 However, while CBC has been recognised for some time to offer theoretical benefits, it is likely to be difficult to implement in practice, particularly if operators do not have appropriate incentives to cooperate. Telephony networks are fundamentally designed to be shared in order to operate efficiently. A switch to CBC would require a fundamental change in how networks manage available capacity. Capacity usage would need to be actively monitored to efficiently manage the network and ensure capacity requirements were met. As such the implementation costs for CBC may be very significant.

6.130 Furthermore, calculation of capacity based charges is difficult and likely to be contentious. In particular trying to establish the appropriate amount of capacity that should be used to set the appropriate charges is challenging. If set too low the risk is that charges may not reflect underlying capacity deployment costs; conversely, if too high then smaller operators could be forced to buy more capacity than they require.

Common cost recovery

6.131 CBC is not an alternative (e.g. to EPMU or Ramsey pricing) methodology for the allocation of common costs between origination and termination and other services. It is an alternative to the average ppm cost structure used under the current approach. Under CBC the overall level of costs could be set based on a range of cost standards, including either LRIC+ or LRMC. If it was deemed appropriate to recover common costs – i.e. a LRIC+ approach was deemed appropriate - the mark-ups ought to be set in a manner that respects the non-linear nature of the network cost structure – i.e. most likely be in the form of fixed charges.

6.132 As suggested above, if wholesale termination charges were set according to CBC, it is likely that the usage component would be very small or zero. The likely effect of this would likely be to significantly reduce call charges and most likely accelerate the trend towards retail pricing structures that are based on fixed fees.

Question 6.7: Do you agree with our preliminary view of the CBC option? If not, what are the additional factors that we should take into consideration, and why are they relevant to our analysis? In addition what do you expect the costs of a move to this option to be?

6.133 There are alternatives to the cost based regulatory options for setting termination controls described above. The following sub-sections consider first mandated reciprocity (as distinct from reciprocity discussed under the deregulatory approach above) and mandated bill and keep (B&K).

Mandated reciprocity

Description

6.134 This approach would set reciprocal rates at fixed rates (i.e., termination rates set at the same level for fixed and mobile). This might be appropriate in a world of increasing service convergence, where providers are increasingly 'hybrid' and not wholly 'fixed' or 'mobile'.

6.135 This approach is not very different from the current US system (see annex 8.1 for more detail on the US termination regime[94]). In some cases, reciprocity has led to pairs of operators electing to adopt B&K between them on a voluntary basis.

Preliminary Assessment

6.136 A single lower termination rate provides a simple and clear regime for all providers and provides clarity for prospective new entrants. In doing so, it addresses the technological and service convergence challenges that are faced by cost-based methodologies. Particularly given the emerging findings of MSA I about the strategic uncertainties facing the mobile sector[95] (and the prospects for fixed mobile convergence) we see real value in having a simple regime that significantly reduces the 'temperature' of the issues around mobile call termination.

6.137 In addition it is also a far simpler regulatory approach, which, once a single 'efficient' benchmark was set, would significantly decrease the regulatory burden of the termination regime. However, the process of agreeing this as an approach and identifying a benchmark might reasonably be expected to be very challenging.

6.138 Evidence from the US suggests that the system has largely been accepted by all operators. The US experience also suggests that mandated reciprocity is likely to lead to commercially negotiated B&K arrangements, if transaction costs can be saved and as long as traffic is roughly balanced. The importance of the latter is limited by the fact that mobile termination is set at the level of fixed termination and, hence, is set very low compared to the current rates in the UK.

6.139 A potentially significant problem with setting reciprocal rates arises where services are not convergent or do not converge as quickly as expected. If this was the case then given that underlying costs for mobile and fixed networks are different (and likely to remain so in the absence of convergence) reciprocal charges may lead to charges that are below cost for mobile (while remaining at cost for fixed).

6.140 This may lead to a disadvantage for mobile operators and therefore mobile consumers, though this effect is in practice uncertain. For example, this regime appears to work relatively effectively in the US, where mobile operators do not appear to be disadvantaged. The reason for this is not immediately clear, and it may be that country specific factors need to be taken into account as the possible explanation.

6.141 However, there may be a number of circumstances under which mandated reciprocity may be economically efficient.

[94] We understand that for the majority of traffic mobile operators can only charge termination up to the level of regulated fixed rates, though in theory, US mobile operators can deviate if they can provide evidence that their costs are higher (but apparently no successful claim has been made so far).
[95] See in particular Section 7 of MSA I.

6.141.1 If it were considered appropriate to recover the common costs for both fixed and mobile services through the retail side of the market (i.e. consistent with the arguments set out under the LRMC approach discussed above) then the current difference between mobile and fixed termination rates would be significantly reduced.

6.141.2 The technology used to provide both fixed and mobile services may become increasingly similar over the next few years. For example, a possible widespread femtocell deployment with fixed broadband as backhaul may blur the distinction between fixed and mobile services. If this was to occur to any significant extent, the costs of fixed and mobile termination may also become increasingly similar. In this case, it may make sense to use the cost of the most efficient operator to set termination rates of all operators irrespective of the precise technology used.

6.141.3 Finally, the presence of uninternalised call externalities (as discussed in the next sub-section in relation to B&K) may justify a further reduction in termination rates which might bring mobile and fixed termination rates even closer together.

6.142 Given the current uncertainty surrounding some of the above circumstances and when and whether they could materialise, it may be that this approach is more appropriate in the future, as services (and underlying costs) converge.

Question 6.8: Do you agree with our preliminary view on mandated Reciprocity? If not, what are the additional factors that we should take into consideration, and why are they relevant to our analysis? In addition what do you expect the costs of a move to this option to be?

Mandated B&K

Description

6.143 Under mandated B&K termination rates are set at zero, as payments among operators for termination services are effectively waved.

6.144 As for the approach of setting reciprocal charges outlined above, mandating B&K has the benefit of being a transparent and simple approach allowing maximum retail pricing flexibility to operators.

6.145 As far as we are aware, no NRA in the world mandates B&K[96], though there are some examples (notably in the US) where B&K is the result of commercial negotiations.

Preliminary Assessment

6.146 The main rationale for mandating B&K is the presence of uninternalised call externalities. To the extent that on average such call externalities require a (downward) adjustment similar in size to the cost of termination it would be efficient to adopt B&K.

[96] Note that Singapore is the only example close to a mandated B&K regime we are aware of – see Annex 8.1 for further details.

6.147 Under any of the remedies considered above, it is the caller that bears the majority of the cost of the call, even if both caller and recipient benefit from the call. B&K explicitly recognises that there are two parties benefiting from a call, and it might be considered efficient that each party (caller and recipient) shares the total cost of the call by paying for the costs incurred by their own network[97].

6.148 One way in which the cost of a call could be shared between the caller and the recipient is that the caller would be charged for origination, while the recipient would be charged for termination, by their respective networks. In order to be efficient, this approach implicitly requires that the relative value of the call to the caller and to the recipient matches the retail costs of origination and termination respectively. The recipient network would have flexibility to recover termination costs either through recipient call charges or through higher subscription fees.

6.149 Several recent theoretical papers have advocated the adoption of B&K as the most appropriate regime in the presence of (uninternalised) call externalities.[98] The general conclusion from this literature is that there is no wholesale regime that can be expected to be efficient under all circumstances (or for all types of calls), but B&K is likely to perform better on average. Therefore, there is a recognition that B&K is not appropriate *per se*, but only when a number of assumptions hold, one of which is that there are (uninternalised) call externalities.

6.150 Proponents of B&K do not argue that this requires that, for every minute of calling, the caller and the recipient share the benefits equally. It is consistent with the weaker assumption that there is some distribution over the division of the benefits across calls, and that the distribution is centred on a roughly even division of the benefits.

6.151 We are not aware of any empirical work systematically assessing the size of call externalities or the degree of possible internalisation of call externalities by consumers or operators. These, however, are the critical factors in reaching conclusions on the desirability of a B&K regime.

6.152 There are of course other aspects that are important to the assessment of B&K as an approach.

6.153 The relative simplicity of this approach means that the regulatory burden is probably the lowest of all the options[99] and the risk of errors arising from miscalculation of the relevant costs is removed (calculating zero is trivial). However, the risk of errors lies in whether the size of call externalities is such to justify bringing down the charge to zero.

6.154 A departure from cost reflective rates also introduces the risk that this approach is less economically efficient in terms of price signals – if the magnitude of call externalities is the same for both fixed and mobile, but the costs are not, then this approach may also distort competition between fixed and mobile services.

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[97] See DeGraba, DeGraba, P. (2000), "Bill and Keep at the Central Office as the Efficient Interconnection Regime", OPP Working Paper Series, 33. .

[98] See Berger, U. (2005), "Bill-and-Keep vs. Cost-Based Access Pricing Revisited", *Economics Letters*, 86(1), 107-112; Cambini C. and Valletti T. (2008), see footnote 78; Cambini C. and Valletti T. (2005), "Investments and Network Competition", *RAND Journal of Economics*, 36, 446-467; DeGraba, P. (2000), see footnote 97; DeGraba, P., (2002), "Bill and Keep as the Efficient Interconnection Regime? A Reply", *Review of Network Economics*, 1(1), 61-65; and DeGraba, P. (2003), "Efficient Inter-carrier Compensation for Competing Networks When Customers share the value of a call", *Journal of Economics & Management Strategies*, 12(2), 207-230.

[99] With the possible exception of deregulation

6.155 Setting MCT charges at zero also removes pricing flexibility at the wholesale level since it forces all operators to charge zero regardless of other factors such as traffic balance.

6.156 There may also be concerns over investment incentives under a B&K regime. It is often argued that B&K will lead to the so-called "*hot potato*" routing. As the originating network will not pay for termination, it will have an incentive to hand-over the call to the terminating network as early as possible. This could lead to concerns about under-investment by the network operators[100]. This does not seem to be of significant concern for regulatory authorities in countries where low termination rate regimes are in place (see annex 8.1 for further information on this).

Question 6.9: Do you agree with our preliminary view of the B&K option? If not, what are the additional factors that we should take into consideration, and why are they relevant to our analysis? In addition what do you expect the costs of a move to this option to be?

Final summary

6.157 In summary, we see this initial consultation as providing the starting point for the critically important debate with customers and stakeholders on the future direction of regulation of termination rates in the UK. We would therefore very much welcome your views on the issues set out in this consultation, and in particular in response to the specific questions we have raised.

[100] To resolve this concern the Central Office Bill And Keep (COBAK) proposal by DeGraba (2000), (footnote 97), suggested that each network (or the regulator) has to define a point to where traffic was handed over to the origination operator.

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 29th July 2009**.

A1.2 Ofcom strongly prefers to receive responses using the online web form at http://www.ofcom.org.uk/consult/condocs/mobilecallterm/howtorespond/form 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 paul.jacobus@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.

Paul Jacobus
4th floor
Competition Group
Riverside House
2A Southwark Bridge Road
London SE1 9HA

Fax: 020 7783 3574

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 Paul Jacobus on 020 7783 3574.

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 second consultation in late 2009.

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 Plain English Guide for smaller organisations or individuals who would otherwise not be able to spare the time to share their views.

A2.5 We will consult for up to 10 weeks depending on the potential impact of our proposals.

A2.6 A person within Ofcom will be in charge of making sure we follow our own guidelines and reach out to the largest number of people and organisations interested in the outcome of our decisions. Ofcom's '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.

After the consultation

A2.8 We think it is important for everyone interested in an issue to see the views of others during a consultation. We would usually publish all the responses we have received on our website. In our statement, 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): Paul Jacobus

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

Consultation questions

Question 3.1: Do you agree with our preliminary view on market definition? Has anything changed, or is anything likely to change within the period of the next review, which would materially impact on the definition of the market(s)?

Question 4.1: Do you agree with our view? Or are there other developments, not considered elsewhere in this consultation document, for potentially removing the underlying causes of SMP?

Question 5.1: What are likely to be the main sources of detriment to consumers of excessive termination rates in the period 2011 to 2015?

Question 6.1: Should our policy approach to regulating MCT change? For example, given the possible benefits, should we adopt a policy of reducing termination rates as far and fast as we reasonably can, within the boundaries of sound economic policy, and whilst recognising underlying cost differences? If our policy approach did change, what do you think are the relevant factors for us to consider in deciding on the best future policy to regulating MCT?

Question 6.2: Are there additional options (other than the six set out in this consultation) that we should consider? If so what are they and what advantages/disadvantages do they offer?

Question 6.3: Do you agree with our preliminary views set out for each of the options? If not, what are the additional factors that we should take into consideration, and why are the relevant to our analysis?

Question 6.4: Do you agree with our preliminary view of the De-regulatory option? If not, what are the additional factors that we should take into consideration, and why are the relevant to our analysis?

Question 6.5: Do you agree with our preliminary view of the LRIC+ option? If not, what are the additional factors that we should take into consideration, and why are the relevant to our analysis?

Question 6.6: Do you agree with our preliminary view of the LRMC option? If not, what are the additional factors that we should take into consideration, and why are they relevant to our analysis? In addition what do you expect the costs of a move to this option to be?

Question 6.7: Do you agree with our preliminary view of the CBC option? If not, what are the additional factors that we should take into consideration, and why are they relevant to our analysis? In addition what do you expect the costs of a move to this option to be?

Question 6.8: Do you agree with our preliminary view on mandated Reciprocity? If not, what are the additional factors that we should take into consideration, and why are they relevant to our analysis? In addition what do you expect the costs of a move to this option to be?

Question 6.9: Do you agree with our preliminary view of the B&K option? If not, what are the additional factors that we should take into consideration, and why are they relevant to our analysis? In addition what do you expect the costs of a move to this option to be?