Mobile call termination market review 2015-18

EE response to Ofcom's consultation

13 August 2014

Non-confidential version

Contents

1. Introduction

EE Limited ("EE") welcomes the opportunity to respond to Ofcom's consultation on its proposals for regulation of the wholesale mobile call termination ("MCT") market for the period 1 April 2015 to 31 March 2018, published on 4 June 2014 (the "MCT Consultation").

This response should be read in conjunction with our earlier responses to the preliminary views and questions raised by Ofcom at the workshop with industry parties on 23 October 2013 (the "Call for Inputs") and the consultation on Ofcom's draft MCT cost model in January 2014.

Those parts of this response marked with [✂] and highlighted in blue contain commercially and competitively sensitive confidential information, which should not be published without EE's prior written consent.

2. Executive summary

Ofcom's proposals for the regulation of wholesale mobile termination rates ("MTRs") over the next market review period come at a time when mobile network operators ("MNOs") are subject to the cumulative effects of several regulatory interventions, both at a national and EU level (including, among others, proposals for increased annual spectrum licence fees, EU regulation of roaming fees, consumer protection measures and government led initiatives for greater mobile coverage and speed).

The combined impact of these measures is restricting the ability of MNOs efficiently to recover incurred costs in an increasingly competitive market where they are simultaneously facing evolving constraints from non-traditional players such as over-the-top ("OTT") providers who in many cases do not bear the same fixed and common costs, nor the same regulatory burdens. It is, therefore, important that Ofcom makes its assessment of what remedies it may be appropriate to impose as a result of its MCT market review in a holistic manner.

In particular, in accordance with its statutory duties, **it is critical that Ofcom makes its regulatory judgment in a manner that does not distort investment incentives** during a period in which the MNOs are investing heavily in improving their mobile networks, to the clear benefit of UK citizens and consumers. For example, EE is currently undertaking significant network investments including a national 2G network refresh, the roll-out of advanced 4G networks, and the migration of customers to innovative 4G services including voice over LTE ("VoLTE") and voice over Wi-Fi.

EE considers that this is particularly important in the context of a market review as part of which Ofcom will – assuming it ultimately decides to continue to impose a charge control on MTRs – be required to make a number of decisions from within potential ranges (e.g. as to the appropriate cost standard, and the key assumptions making up the underlying cost model).

EE has, for example, consistently set out its views that the appropriate cost standard is LRIC+, allowing some recovery of fixed and common costs from charge controlled MCT services. EE maintains its position that pure LRIC

should be rejected because of its risk to investment, together with its likely overall cost to consumers.

Even if Ofcom continues to disagree with this position, **Ofcom should acknowledge that a pure LRIC standard represents the extreme minimum of the potential range of efficient charges and that such an approach therefore carries asymmetric risk**:

- If Ofcom errs by setting charges that are below the actual level of pure LRIC then MNOs will be forced to incur a loss on every minute of voice termination they supply, with potentially serious consequences for the efficient use of services and ongoing investment. Ofcom itself has acknowledged that this would be inconsistent with its main economic objectives for setting charge controls.
- On the other hand, Ofcom has accepted that there is no clear evidence that a charge control level that is set somewhat above pure LRIC is necessarily less efficient. Such an outcome would, therefore, be clearly less damaging and more consistent with Ofcom's duty to ensure the greatest possible benefits are conferred on consumers.

EE firmly believes, therefore, that **Ofcom should take a conservative approach to other aspects of the MCT market review**, including in relation to cost modelling. In particular, Ofcom should only adopt values in relation to uncertain parameters where it has a high degree of confidence that the values so adopted will not lead to charges below the actual level of pure LRIC. In this respect, EE is concerned that **Ofcom's current approach to cost modelling is likely to lead it to underestimate the actual LRIC of mobile termination**. For example, we note that Ofcom has failed to properly reflect the most likely future outcome whereby MNOs will be assigned some 700 MHz spectrum. In addition, we believe that Ofcom is materially underestimating the cost of equity. Correcting for these two factors alone would increase Ofcom's estimate of LRIC by over 13% to 0.539ppm.

EE also believes that **Ofcom's proposal not to adopt a glide path to move to the new estimate of pure LRIC is a mistake and will undermine regulatory certainty as it constitutes an unjustified departure from Ofcom's well established practice and policy**. An immediate adjustment in MTRs to Ofcom's new, lower, estimate of LRIC does not meet the reasonable expectations of MNOs that determine investment and revenue strategies several years in advance. Ofcom's proposed approach therefore risks damaging future incentives to invest in the UK, especially given that MNOs' shareholders have the option of investing in other markets. A glide path to the new, lower, maximum MTR proposed by Ofcom is clearly justified on the basis of a cost benefit analysis and dynamic efficiency grounds, as well as the need to adopt a conservative approach given the risks inherent in adopting a pure LRIC standard.

Overall, EE therefore has significant concerns that Ofcom's proposed charge control conditions risk an inefficient outcome and, in the long term, damage to innovation, investment and competition by MNOs, ultimately to the detriment of consumers.

Finally, whilst EE welcomes Ofcom's proposal to extend any charge control remedy to smaller MCPs, we believe that **the adoption of a single uniform**

benchmark rate is unjustified taking into account the lower cost base of many smaller mobile communications providers ("MCPs"). EE therefore considers that smaller MCPs should be regulated at a lower rate, unless they can demonstrate to Ofcom that their costs justify the rate applicable to the four MNOs.

This response is structured as follows:

- **Section 3** sets out EE's views on Ofcom's market definition and market power assessment, highlighting the increasing importance of the competitive constraint posed by OTT services and the need for Ofcom to undertake further analysis before concluding that such services fall outside of the relevant market;
- **Section 4** sets out EE's key concerns regarding the SMP remedies proposed by Ofcom, including in particular the failure to implement a glide path;
- **Section 5** sets out EE's detailed views on Ofcom's analysis of the appropriate cost standard, explaining the basis on which we believe that MTRs should be set above pure LRIC;
- **Section 6** provides further information to assist Ofcom's cost modelling in a number of areas where it can be improved (building upon our response to Ofcom's consultation on its draft MCT cost model); and
- **Section 7** sets out EE's responses to the specific questions raised by Ofcom in the MCT Consultation.

3. Market definition and market power assessment

EE maintains its position that MCT should be considered as part of a wider competitive mobile services market, and therefore does not agree with Ofcom's proposed market definition.[1] Irrespective of Ofcom's conclusion on this point, however, of particular concern to EE in the context of the current market review is Ofcom's failure to recognise properly the importance of the evolving competitive constraint posed by OTT services – in particular OTT voice services – for the purposes of its market definition analysis and market power assessment.

In respect of market definition, EE considers that Ofcom may have wrongly excluded OTT voice services (and potentially also other OTT services, such as messaging services) from the market as a result of several errors in its analysis.

- First, Ofcom has made an error of approach in assessing the relevant retail product market by (i) not applying an empirical "small but significant non-transitory increase in price" ("SSNIP") test, the standard approach to market definition applied by competition and regulatory authorities, and (ii) not focusing sufficiently on the position of marginal customers. In consequence, Ofcom has adopted an unduly narrow market definition on the basis that there are some groups of (non-marginal) customers who would be unable or unwilling to switch in response to a price rise. In adopting this approach, Ofcom is guilty of the so-called "toothless fallacy" (named after the *United Brands* case) (see section 3.1).
- Second, EE believes that Ofcom has overstated the significance of factors which may limit the use of, and consequently substitution to, OTT voice services (see section 3.2).
- Third, Ofcom has erred in discounting the relevance of non-voice OTT services as a substitute for more traditional voice services based on delivering calls to 07x numbers (referred to below as "traditional mobile voice calls / services") merely on the basis of differences in the nature of communication, without undertaking any quantitative assessment (see section 3.3).

In consequence, EE does not believe that Ofcom's current conclusion that OTT services do not form part of the relevant market is reliable. Irrespective of the outcome, and in order to ensure that Ofcom's market definition conclusions and any significant market power ("SMP") conditions imposed by Ofcom as a result of its market review are objectively justifiable and not unduly discriminatory as required by the Communications Act 2003 ("the Act"), further analysis by Ofcom as proposed by EE is therefore required. In EE's opinion, this is likely to reveal that OTT services *will* potentially become a sufficient constraint to traditional mobile voice services over the duration of the charge control period to warrant

[1] As set out in EE's responses to the previous MCT review and the Call for Inputs.

inclusion within the retail market on the basis of a SSNIP test, especially given the forward looking perspective of the assessment which Ofcom is required to conduct.

In any event, and regardless of whether or not they are found to be in the relevant market, EE considers that Ofcom needs to take into account OTT services for the purpose of its market power assessment and/or determination of the appropriate remedies (see section 3.4). The existence and level of market power is influenced by the total level of competitive constraints, not only those which emanate from inside the market, and in wholesale markets by indirect constraints arising from the retail market. Yet, Ofcom has failed to conduct a complete analysis of the extent to which potential demand substitution at the retail level would be sufficient to constrain price increases at the wholesale level. As the European Commission has recently stated:

> "*if there is competitive pressure stemming from alternative platforms at retail level…in order to estimate the degree of strength of indirect constraints, Ofcom should [provide] inter alia a* ***qualitative and quantitative assessment*** *of factors including the effective pass-through from wholesale to retail prices (including an assessment of the wholesale/retail price ratio), the (in)capacity of operators to absorb wholesale price increases depending on competitive conditions at retail level, as well as the effective willingness of retail consumers to switch their operator in response to the price increase.*" [2] (emphasis added)

Finally, EE is sure that Ofcom will agree with us that OTT services are developing rapidly. In these circumstances of rapid technological change, EE believes that Ofcom's empirical evidence needs to be updated regularly to ensure that Ofcom's market definition and SMP assessment (made up to 3 years in advance) does not become outdated (see section 3.5).

3.1 The application of the SSNIP test

The standard way for competition and regulatory authorities to assess the relevant retail product market is based on the SSNIP test. The test starts from the narrowest product (the focal product), assuming a hypothetical monopolist, and then asks how customers would behave in response to a SSNIP of 5-10%. If a sufficient proportion of customers would switch to alternative products so as to render the price increase unprofitable, then the product market is widened to include the alternative products. At least two things flow from this:

- empirical evidence is required; and
- the focus must be on marginal customers (i.e. those most likely to switch in response to a price increase).

[2] Commission decision concerning Case UK/2014/1606: Wholesale local access market; Case UK 2014/1608: Wholesale broadband access market.

The need for empirical evidence

Ofcom's 200 page consumer survey results, relied upon for the purposes of the MCT Consultation[3], do not contain any questions or evidence relating to how respondents might behave in response to a price increase in traditional mobile voice call services.

This is despite the fact that, so far as practicable, market definition should be an empirical exercise. For example, a critical loss analysis ("CLA") can be used to determine if the actual loss in sales from the SSNIP is above the critical value to render the price increase unprofitable. Clearly this is directly relevant to the question of whether a retail market for mobile voice calls also includes OTT voice services.

The Competition and Markets Authority ("CMA") supports an empirical approach to market definition, as did its predecessors the Competition Commission ("CC") and the Office of Fair Trading ("OFT").[4] For example, the joint CC/OFT merger assessment guidelines[5] endorse the use of evidence from consumer surveys for applying the SSNIP test and the CC has relied on surveys to determine the likely response of consumers to a hypothetical 5-10% increase in charges in a number of recent cases.[6]

EE notes that Ofcom has relied on such data in other market reviews. For example, when assessing the level of substitutability between fixed and mobile services in its recent 2014 Fixed Access Market Reviews ("FAMR") Statement, Ofcom stated:

> *"we consider it more relevant that, when asked how they would respond to a 10% increase in the price of their monthly landline bill (i.e. across the package of access and calls), only 10% responded that they would give up their fixed line"*[7]

The survey relied upon by Ofcom for the purposes of the 2014 FAMR Statement was specifically commissioned for the purposes of Ofcom's 2013 Fixed Narrowband Services Market Review ("NMR"), as part of which Ofcom conducted a detailed empirical analysis to determine the extent to which potential substitution at the retail level would be sufficient to constrain pricing of wholesale call origination.[8]

This included assessing whether there was evidence to suggest that, if the price of wholesale call origination increased, retail customers would switch away from retail fixed narrowband call products to mobile, voice over IP ("VoIP") or text based services for a sufficient proportion of calls to render such a price increase unprofitable. In relation to each potential alternative substitute,

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3 Ofcom, MCT Consultation, Annex 18.

4 See the OFT's guidelines on Market Definition (adopted by the CMA Board in March 2014).

5 Adopted by the CMA Board in March 2014.

6 See for example, *Streetcar/Zipcar* (2011) and *Rank/Gala* (2013).

7 Ofcom, FAMR Statement 2014, para 3.32.

8 Ofcom, NMR Statement 2013, paras 5.54 to 5.134.

Ofcom took into account survey evidence on the proportion of customers that would switch in response to a 5-10% price increase at the retail level.

Whilst noting that the SSNIP test analysis was complicated by the fact that a wholesale price increase of 5-10% may translate into a smaller increase at the retail level, Ofcom conducted its analysis on the basis of potential substitution in response to a 5-10% retail price increase "*in order to ensure we have not understated the effect of any indirect constraints arising from the retail level*".[9]

Given the importance placed upon the use of survey evidence in applying the SSNIP test by Ofcom in previous market reviews (as well as by the CMA/CC/OFT), it is unclear why Ofcom has chosen to ignore such a key element of consumer research and economic analysis. Ofcom has not identified any novel or unique factors present in the current retail market that render a SSNIP test unsuitable (and EE does not consider that any such factors exist).

In order to verify the robustness of Ofcom's market definition and SMP findings, and accordingly ensure the objective justifiability of any SMP remedies imposed as a result of those findings, EE therefore believes that it is incumbent upon Ofcom to supplement its current survey with additional questions to understand at the most basic quantitative level how consumers are likely to behave in response to a SSNIP for traditional mobile voice services. Unless it does so, Ofcom will have failed to have put itself in a position properly to carry out its statutory duties.[10]

The focus must be on marginal customers

The SSNIP test also demands that when assessing market definition the focus must be on marginal rather than non-marginal customers.

The mere fact that some (non-marginal) groups of customers may be unable or unwilling to switch to a particular product in response to a price increase does not mean that the product falls outside the scope of the relevant market.[11] A belief that this is the case is sometimes referred to as the "toothless fallacy" after the *United Brands*[12] case.

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9 Ofcom, NMR Statement 2013, para 5.56.

10 See, for example, *Tesco v CC* [2009] CAT 6, paras 136-139, discussing principles likely to be relevant when it comes to assessing Ofcom's compliance with section 47 of the Act.

11 At least where price discrimination is not possible, which it is not in this context (see below).

12 C-27/76 *United Brands v Commission* [1978] ECR 207. In that case, the European Court of Justice held that bananas were in a separate market from apples, oranges and other summer fruit, partly because the very young, old and infirm could not manage other fruit, although there was no way of discriminating against the dentally challenged, since they rarely shop for themselves. As one leading commentator has noted, this reasoning was flawed because these vulnerable groups "*were protected from high prices by the loss of sales to healthy people that would result if the price of bananas were raised … It is thought*

The incorrectness of the reasoning in *United Brands* and the need to focus on marginal customers (rather than average customers or specific customer groups) is now widely recognised by leading competition law text books. For example, Bellamy & Child, under a heading entitled "*The SSNIP test focuses on marginal purchases and suppliers*", state:

> *"… the SSNIP test does not examine whether all customers would switch, or even whether a majority of customers would switch. Rather it asks whether a sufficient number of customers would switch to render the price increase unprofitable. Switching to alternative products by a relatively small proportion of customers may be sufficient to render the price increase unprofitable. The* ***existence of a significant proportion of customers that is unwilling or unable to switch to alternative products is therefore irrelevant*** *(unless such customers themselves constitute a distinct market)."*[13] (emphasis added)

Similarly, under a heading entitled "*The responses of marginal consumers are more important than the responses of average consumers in assessing substitutability*", Bishop & Walker state:

> *"… as long as a reasonable number of consumers are 'marginal' and are willing to switch in response to a relative price change, the existence of other consumers who would not switch (even if these account for the majority of consumers) does not imply a narrow market. The existence of even a large group of consumers who would not switch in response to a relative price increase is not by itself sufficient to conclude that the relevant market should be defined narrowly … The mistake of focusing on the behaviour of particular groups of consumers, or on average consumers, when defining a relevant market has been referred to as the 'toothless fallacy' after the United Brands decision."*[14]

Ofcom states at the beginning of its section on market definition that product market definition is based on an application of the SSNIP test.[15] However, when it comes to assess the substitutability of OTT voice services for traditional mobile voice services, Ofcom makes an error of approach by (i) not actually applying a SSNIP test, and (ii) not adopting an approach which recognises that it is the existence of marginal consumers that is critical to the assessment. In the case of OTT voice services, this includes both non-users of OTT voice services currently that might switch to them for the first time in response to a SSNIP (e.g. those which already own a smartphone and can therefore readily switch to OTT voice services), as well as existing OTT-users that would substitute a greater proportion of their mobile calls for OTT.

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that United Brands will no longer be followed" (Korah, An Introductory Guide to Competition Law, 8th edition, para 1.3.3.1).

13 Bellamy & Child, European Community Law of Competition, 6th edition, para 4.025.

14 Bishop & Walker, The economics of EC competition law, University Edition, paras 4-026 to 4-027.

15 Ofcom, MCT Consultation, para 3.11.

Ofcom's current conclusions are based largely on findings that OTT voice services are not substitutable for certain groups of customers (i.e. for the reasons set out at points (i) to (iv) of the following sub-section). However, it fails to take into account the fact that, *a priori*, mobile operators have no ability to price discriminate between calls subject to OTT substitution and those which are not (e.g. mobile operators can't identify whether an inbound voice call is made from a smartphone or a 2G handset, where the latter does not have OTT functionality[16]) and that as a result these customers would – if there would be sufficient switching by other customers to render a SSNIP unprofitable – be protected from price increases. It is the potential for switching by these other, marginal, customers which Ofcom has failed to properly assess.

As a result of these errors, EE believes that Ofcom's current reasoning is insufficient for it to be able to confidently exclude OTT voice services from the relevant market.

3.2 The significance of OTT voice services as a substitute for traditional mobile voice services

In the period 2012-2014, the use of OTT voice services has become significant for the first time, including over both Wi-Fi and mobile spectrum. This trend has been supported by increasing levels of penetration of smartphones, as well as improved mobile data services including through the launch of 4G.

This rapid acceleration in OTT usage is reflected in Ofcom's latest Communications Report, which reports "*significant changes in the use of non-traditional communication services in the year to Q1 2014*" and increased levels of VoIP use which can be explained by "*the increased take-up of smartphones and tablets with integrated VoIP apps (such as FaceTime and Skype)*".[17] Ofcom's latest findings include:

- the percentage of adults that are users of VoIP services has almost tripled over the last 5 years, to 35%[18];
- 48% of users of VoIP services use them on a weekly basis, and 74% at least monthly[19]; and
- 57% of VoIP users used a VoIP service for the first time within the last 2 years.[20]

16 And in any event, as noted below, substitution can take place via a number of other devices such as laptops and tablets.

17 Ofcom, Communications Report 2014, p. 350.

18 Ofcom, Communications Report 2014, p. 312. EE notes that whilst the statistics relating to VoIP services in the Communications Report covers all VoIP services (i.e. not limited to "pure-OTT), the Report notes that VoIP-to-VoIP calls are the most type of call made over VoIP connections (p. 314).

19 Ofcom, Communications Report 2014, Figure 5.17. This compares to 43% / 64% weekly / monthly OTT usage reported by Ofcom in the MCT Consultation (para. 3.87).

EE believes that OTT/IP-based voice services are close substitutes for traditional mobile services and currently constrain the pricing of such services. [✂].

[✂]. This demonstrates that retail pricing differentials between traditional voice and OTT voice calls are falling over time.

In contrast, Ofcom appears to have understated the extent to which OTT represents both:

- a direct constraint on pricing of retail mobile voice services; and
- an indirect constraint on setting the MTR applying to underlying MCT services.

Ofcom has indicated that substitutability between pure OTT voice services and services on which MTRs are payable is likely to be limited by the following factors:

(i) OTT services may be offered in closed user groups;

(ii) certain OTT services are not available on all handsets;

(iii) potential recipients of OTT calls may need to be logged in to use the service;

(iv) OTT services may be viewed as less easy to use in comparison to making calls to mobile numbers because some applications "in the past" required separate user IDs; and

(v) the quality of service of OTT calls may be poorer as they are not managed by the call provider and may be more likely to cut out as the calling party is on the move.[21]

EE considers that Ofcom has overstated the significance of these factors, for the reasons set out below. Further, it is notable that Ofcom focuses only on factors which may *limit* substitutability and does not acknowledge the many features of OTT voice services which are likely to make them an attractive substitute for a range of relevant marginal customers in the event of a SSNIP in traditional mobile voice calls. For example:

- It is apparent that, from the consumer's perspective, the intended use and primary characteristics of OTT voice services are almost identical to traditional mobile voice calls (i.e. a service enabling the user to be able to carry out a two-way communication with the call recipient at a sufficient level of quality for the conversation to be understood by both the caller and recipient). As per the OFT's market definition guidance:

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[20] Ofcom reports that 24% of VoIP users have been using VoIP services for less than a year, with a further 33% using them for between 1-2 years. Ofcom, Communications Report 2014, Figure 5.18.

[21] Quality of service often refers narrowly to KPIs. In this section EE refers to a broad set of quality experience measures including: acoustic quality, latency and jitter, drop call ratios, call set-up success rate and better coverage on the move.

> *"Where the objective characteristics of products are very similar and their intended uses the same this would be good evidence that the products are close substitutes."*[22]

- For consumers that have the ability to access OTT services (see below) the switching costs are minimal.[23]

EE provides evidence below to demonstrate that the factors highlighted by Ofcom in the MCT Consultation are unlikely to significantly constrain substitution to OTT voice services at present, and that they are in any event likely to substantially disappear over the period of the next charge control period.

EE also notes that Ofcom's survey evidence excludes key OTT voice substitutes such as Facebook calls, which represent a popular alternative to Viber and FaceTime. As such, Ofcom's survey data is liable to understate the current extent of OTT usage.[24]

a) Closed user groups, handset availability and the need for users to be logged on

Three of the factors highlighted by Ofcom suggest that its analysis has been influenced by the "toothless fallacy" from the *United Brands* case, discussed above. Ofcom notes that OTT services are offered in closed user groups, that certain OTT services are not available on all handsets, and that potential recipients of OTT services may need to be logged in to receive the services.

All of these points simply indicate that there are certain groups of consumers for whom OTT services may not be substitutable. However, for the reasons discussed above this is not a good basis for excluding a service from the defined market. So long as OTT services are substitutable for *certain* groups of consumers, as Ofcom appears to accept, then it is necessary for Ofcom to consider whether it is possible that substitution by these marginal consumers could render a price increase unprofitable. This task should be central to Ofcom's analysis but is absent from the MCT Consultation.

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22 OFT guidelines on Market Definition (adopted by the CMA Board in March 2014), paragraph 3.7.

23 Ibid.

24 For example, Facebook announced as far back as March 2011 that it had over 30 million users in the UK (see http://www.telegraph.co.uk/technology/facebook/8356755/Facebook-used-by-half-the-UK-population.html) and many of these have smartphone handsets from which to make OTT voice calls (Facebook announced in Q3 2013 that over 73% of its total user base access its services from a mobile device - see http://thenextweb.com/facebook/2013/10/30/facebook-passes-1-19-billion-monthly-active-users-874-million-mobile-users-728-million-daily-users/).

(i) OTT being offered in closed user groups

In addition to this overriding point, Ofcom's analysis does not capture the rapid growth in subscribers to OTT voice services, which undermines the idea of closed groups limiting substitution. As Ofcom accepts, with the growth in use of such services the more likely it becomes that users will have access to the same OTT application(s), significantly reducing any "compatibility" issues.[25] For example:

- Viber reports it has passed the milestone of 100 million concurrent online users and 360 million unique registered users. When online users are counted alongside users that are available via push notification[26], the company estimates that over 200 million users are reachable via the platform at any given time.[27]
- Teleography estimates that Skype's "on-net" (i.e. Skype to Skype) traffic grew 36 percent in 2013, to 214 billion minutes.[28] Skype reported passing 300 million users in 2013.[29]
- WhatsApp have announced that it will be offering an OTT voice service in 2014.[30] Given WhatsApp's high penetration rates in Europe, WhatsApp could rapidly erode traditional voice calls made on mobile handsets including in the UK.[31] The fact that Facebook paid US$19 billion for WhatsApp underscores the potentially unprecedented extent to which the WhatsApp OTT service could compete away revenues from traditional voice call services.[32] WhatsApp have more than 450

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25 Ofcom, MCT Consultation, para 3.85.

26 Push notifications allow an application to notify the user of new events (e.g. an incoming call) or messages without the user needing to have the application open.

27 See http://uk.pcmag.com/news/33103/viber-hits-milestone-100m-active-users-updates-des.

28 See http://www.telegeography.com/products/commsupdate/articles/2014/01/15/skype-traffic-continues-to-thrive/.

29 See http://blogs.skype.com/2013/08/28/skype-celebrates-a-decade-of-meaningful-conversations/.

30 http://techcrunch.com/2014/06/04/brian-acton-startx/.

31 For example, KPN issued a profit warning in April 2011 citing cannibalisation of core revenue in its domestic market by over-the-top services (notably WhatsApp). See http://www.analysysmason.com/en-GB/Research/Content/Viewpoints/RDMV0_RDMY0_Tariff_rebalancing_Oct2011/.

32 For example, HSBC Global Research have reported "*OTT services, which have provided a ready mechanism for customers to take their voice and messaging commerce elsewhere – in volumes sufficient to trigger a profit warning at KPN in 2011. In our view, applications like Skype and WhatsApp now rather undermine the presumption that mobile customers lack countervailing purchasing power*." HSBC Global Research, Supercollider: European mobile consolidation is a win-win for operators and citizens alike, TMT, February 2014.

million users, growth of over 1 million new users per day, and looks set to exceed 1 billion users within a few years, hugely boosting Facebook's global reach and number of accounts in the UK.[33]

- This growth has led HSBC Global Research to comment that:

> "*applications like Skype and WhatsApp now rather undermine the presumption that mobile customers lack countervailing purchasing power*".[34]

With most OTT voice services being free to download the barriers to expansion in the size of these closed user groups are minimal, and there is no reason to suggest that this rapid acceleration in take-up will not continue. EE also notes that many consumers make a large majority of their calls within a small group of contacts[35], reducing the likelihood that the issue of "closed groups" will prevent substitution (e.g. because users can encourage their regular contacts to download the same OTT voice application(s)).

(ii) Particular OTT services not being available on all handsets

As Ofcom notes[36], one of the key enablers for subscribers to have the ability to substitute to OTT voice services is access to a smartphone. However, a significant majority of mobile subscribers is likely to have a smartphone by 2017/18.[37] Furthermore, OTT services are also commonly used on other devices such as tablets, laptops and PCs. [38]

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33 As of Q4 2013, WhatsApp's penetration rate among US mobile internet users was five percent. In contrast, European countries had far higher adoption rates with Spain being ranked first with 74% of mobile internet user usage penetration. See http://www.statista.com/statistics/291540/mobile-internet-user-whatsapp/.

34 For example, KPN issued a profit warning in April 2011 citing cannibalisation of core revenue in its domestic market by over-the-top services (notably WhatsApp). See http://www.analysysmason.com/en-GB/Research/Content/Viewpoints/RDMV0_RDMY0_Tariff_rebalancing_Oct2011/.

35 For example, Ofcom's Communications Report 2014 indicates that OTT voice services are typically used for calling circles including family and friends. Ofcom's survey shows that 53% of OTT users call family members who live in the UK and 45% call friends who live in the UK (p.315).

36 Ofcom, MCT Consultation, para 3.85.

37 For example eMarketer (2013) forecasts that over 80% of UK mobile users will own a smartphone by 2017 (see http://www.emarketer.com/Article/Nearly-Half-of-UK-Consumers-Will-Use-Smartphones-This-Year/1009956) and Ofcom forecasts an even higher percentage of 84% of customers with a 3G or 4G device by Q1 2017/18 (as per Ofcom's MCT cost model).

38 Ofcom's Communications Report 2014 reports that while smartphones are important for making and receiving OTT voice calls, 55% of adult

(iii) Potential recipients may not be logged in to the service

EE does not believe that the fact that potential recipients of OTT calls may not be logged in to the service represents a significant barrier to the use of OTT voice services. Increasingly OTT voice services, including those offered via apps on smartphones, are becoming easier to use, with functionality to make and receive calls often embedded in the device and/or operating systems so that options to make and receive calls appear together onscreen when choosing to make a call. For example:

- In many cases (e.g. Skype) it is possible to see immediately which of your phone contacts are logged in and that you can call using the service. This also allows another substitute for calls to groups of individuals.
- As referred to above, even if you are not logged in to an OTT service you can often still be contacted by push notification so long as you have an active internet connection (which for consumers with a 3G or 4G handset is usually the case).
- In any event, many users of OTT services are permanently logged on and are therefore "always online".

b) Some OTT services require separate user IDs

Ofcom's argument appears to be that consumers may be less likely to switch to OTT services because "*in the past"* they required a user ID for the person they are calling. However, this seems to constitute a clear error of reasoning given that these reviews are forward-looking and there is no evidence to suggest that this continues to represent a significant barrier to making and receiving OTT calls (or will over the next 3 years).

As set out above, OTT voice services are becoming increasingly easy to use, and Ofcom itself refers to the features of several services which enable users to integrate them into their contacts list.[39]

c) OTT calls may be poorer quality

EE considers that Ofcom overstates this limitation because in many practical situations OTT voice calls will be of similar quality to traditional circuit switched voice calls (e.g. made over a 2G or 3G mobile cellular network).

When comparing the quality of voice calls made and received over an MNO's mobile network against pure OTT voice calls quality of service ("QoS") should reflect the various parameters affecting voice call experience including:

- acoustic quality;
- latency and jitter;
- dropped call ratios;

OTT users in the UK use OTT voice over a laptop computer, 28% use tablets, and another 36% use desktop computers (pp.315-316).

[39] Ofcom, MCT Consultation, para 3.85.

- call set-up success rate ratios; and
- coverage on the move.[40]

While the quality of voice calls on carrier grade networks continues to improve as a result of MNOs' significant investments in their 3G and 4G networks, these investments have also improved the quality of pure OTT services hosted over those networks, and it is now the case that for a stationary user with reasonable signal strength (either on a cellular or Wi-Fi network), the OTT service quality is likely to be of similar quality to traditional 2G and 3G voice. For example:

- Most OTT voice services are supported by higher bandwidth data rates of at least 50-60kbps compared to circuit switched 2G voice calls which are typically supported by bandwidth rates as low as 12kbps. Higher bandwidth data rates can support higher quality voice call services (i.e. higher bandwidth supports better acoustic quality as the voice call sounds less "tinny"). For this reason, unless the underlying bandwidth data rate is constrained through contention over the internet, OTT voice calls are unlikely to be inferior in quality to traditional mobile voice calls.[41]
- Even where contention is a potential issue, contention arising from data traffic congestion will typically arise when consumers are least likely to make voice calls (as voice traffic peaks tend to occur at different times of the day and week than data traffic peaks), reducing the likelihood that QoS issues will limit substitution. In any event, this will not necessarily be a significant factor for consumers choosing the service unless they have specific minimum QoS requirements (e.g. business customers or government).
- Whilst it remains the case that the reliability of OTT services for users that are "on the move" is often worse than for traditional mobile voice services, we consider that many consumers make voice calls at work or at home (either on a cellular or Wi-Fi network) when they are stationary and the reliability and acoustic quality of OTT services is accordingly more likely to be similar to traditional 2G/3G voice calls.
- As Ofcom notes, the video calling functionality of certain OTT services may be viewed by many users as offering a superior service to traditional mobile services (e.g. such as FaceTime, which offers high quality acoustic and video voice calls).[42]
- OTT providers will continue to benefit from MNOs' current investment plans to upgrade their networks over the market review period, including the continued roll-out of 4G services, to remove any residual

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40 [✂].

41 EE notes that in the Communications Report 2014 Ofcom presents evidence that 15% of VoIP users reported as one of the main advantages of VoIP services the fact that such services have *better* call quality than traditional mobile services when the connection is good enough (Figure 5.13).

42 Ibid.

QoS issues (actual or perceived) concerning OTT voice services, without bearing any of the associated costs.

In any event, as set out above (see section 3.1), under a SSNIP test Ofcom is not tasked with showing that OTT voice services are potential substitutes for all traditional mobile voice services nor that they are capable of substituting any call to a 07x number. The fact that there is a (even significant) rump of calls which cannot be substituted is therefore not a determining consideration.

EE therefore reiterates that Ofcom must undertake further analysis to determine the response of consumers to a hypothetical increase in the price of traditional mobile voice calls before it can conclude that OTT voice services do not form part of the relevant retail market, and thereby act as a significant constraint on MTRs. Furthermore, it is important that this analysis looks not only at current levels of usage of OTT voice services, but also forecast take-up over the market review period.[43]

3.3 Other OTT Services

EE also considers that other OTT services, in particular OTT messaging, are becoming an increasingly important alternative to traditional mobile voice calls. In contrast to Ofcom's views as expressed in the MCT Consultation[44]:

- OTT messaging services show a number of developments which indicate that they are more likely to be viewed as substitutes to voice calls than traditional SMS services. For example:
    - WhatsApp operates on a real time platform which suggests that its current messaging service is a closer substitute to real-time two-way mobile voice communications than other messaging services previously considered by Ofcom.
    - Apple has announced that its scheduled IOS 8 update – expected in 2014 – will include an OTT voice service. The service will include a "tap-to-talk" feature that will let users turn on their microphone and speak a message into the iMessage thread. This will enable Apple users to listen to audio of one another's messages, and will also provide a substitute to traditional voicemail services. Apple will ping the phone to identify if it is within a Wi-Fi area and then enable the voice call in the same way as it supports an iMessage service.[45]
- It is very easy for customers to switch to use OTT messaging services[46] and for the same reasons as set out above in relation to OTT voice

[43] See, for example, Commission decision concerning Case UK 2014/1607.

[44] Ofcom, MCT Consultation, footnote 96.

[45] http://bgr.com/2014/06/02/apple-ios-8-announced/; http://bgr.com/2014/06/02/apple-ios-8-new-features/.

[46] For example, Enders reports: "*The mobile messaging environment has become far more fragmented due to the presence of the address book and other apps on the handset – any new app can access a ready-*

services, EE also does not consider that the issue of "closed user groups" will act as a material limitation on substitution to OTT messaging services.

- EE notes that services such as Facebook and WhatsApp have highly engaged audience with 70% / 62% of users reportedly signing on every day respectively.[47]
- The European Commission has recognised that there is a high degree of substitutability between instant messaging and voice / video calls:

> *"taking into account demand-side substitutability, a consumer can switch easily, immediately and without cost between the three main types of services (IM, voice and video calls). For instance, a consumer can start a conversation by IM, then turn to the voice or video call modality to continue the conservation*
>
> *…*
>
> *The Commission considers from assessing the evidence from the market investigation that consumer communications services should not be distinguished according to functionality. For instance IM is not perceived as a stand-alone communication service, but as part of a broader market. IM should not therefore constitute a separate product market. A large majority of respondents also state that voice and video calls should not be regarded as constituting different product markets."*[48]

In EE's experience, OTT messaging is a clear competitive threat to traditional mobile voice services. EE therefore believes that Ofcom should undertake further work to determine the extent of potential substitution from mobile voice services to OTT messaging services, as well as to OTT voice services. In order to gain a full and complete picture of the direct and indirect constraints to MCT services, Ofcom's market definition analysis should be based on an assessment of the overall competitive constraint posed by all OTT services "taken in the round" – including of course an empirical assessment of the extent to which consumers would switch to such services in the event of an increase in the price of traditional mobile voice calls.

In so doing, Ofcom would be acting consistently with a number of statements it has made in recent years acknowledging the competitive constraint on traditional voice services provided by various OTT services. For example:

> *"Services such as email, instant messaging and social networking sites, all of which offer alternatives to voice calls originating on fixed and mobile networks, have proved popular in the UK as take-up of mobiles, smartphones and fixed broadband has become widespread... This growth in the use of services that use data networks as a*

made contacts list, photo collection, social network identity etc., significantly reducing the barriers to entry." Enders, Facebook/WhatsApp: an expensive limited defence, 21 February 2014

[47] Enders, Facebook/WhatsApp: an expensive limited defence), 21 February 2014.

[48] Case No COMP/M.6281 - *Microsoft/Skype*, decision of 7 October 2011, paras 26 – 28.

substitute for voice services presents a number of issues for conventional voice providers. These include increased competition from OTT providers, because the services do not generate additional revenue for the network provider beyond data access revenue."[49]

"A key driver of the shift away from mobile voice services is increasing take-up of smartphones, as these devices allow consumers to communicate using alternatives to fixed voice calls (such as email, instant messaging and social networking sites) that are either not available, or not sufficiently convenient to use, to make them a mass-market proposition on more basic handsets."[50]

Ofcom would also in so doing be acting consistently with its approach in relation to the 2013 NMR, where Ofcom presented survey evidence to demonstrate the proportion of customers that would switch to messaging services in response to an increase in price in their landline bill (see section 3.1 above).[51] In addition to the other important regulatory obligations already referred to in this consultation response, Ofcom's obligations under section 3(3) of the Act to ensure consistency of approach in its regulatory activities alone would suggest that it is important for Ofcom to remedy this discrepancy.

3.4 SMP assessment

Ofcom currently, erroneously in EE's view, discounts pure-OTT services for the purposes of assessing the existence of SMP in the provision of MCT services on the basis that they fall outside of Ofcom's proposed market definition.[52]

It is apparent that if, on the basis of a proper application of the SSNIP test, Ofcom were to conclude (now or in the future) that OTT services do constrain MCT pricing sufficiently to be regarded as forming a part of the relevant market, Ofcom's SMP findings would also need to be reviewed.

In addition, however, any assessment of market power should take into account the sum total of all competitive constraints, including those which arise from outside the relevant market. As the European Commission has recently noted, indirect competitive constraints on wholesale products stemming from the underlying retail market should be taken into account when assessing the existence of SMP and/or appropriate SMP remedies even where they may not be sufficient to fully constrain pricing.[53]

This is particularly the case when matters are considered on a forward looking basis and where that competitive constraint may be expected to continue to

[49] Ofcom, Communications Market Report 2012, p.299.

[50] Ofcom, Communications Market Report 2013, p.375.

[51] Ofcom, NMR Statement 2013, paras 5.109-5.112.

[52] Ofcom, MCT Consultation, paragraph 4.28.

[53] See Commission decision concerning Case UK/2014/1606: Wholesale local access market; Case UK 2014/1608: Wholesale broadband access market: "*When indirect constraints are found to exist but are not strong enough to constrain the price of other WLA or WBA products, they should be taken into account when assessing whether the incumbent operator has SMP on the relevant market, as well as alternatively in the assessment of the appropriate remedies*."

increase, such that the relevant services may potentially form a part of the market in future. As stated in the Commission's guidelines on the assessment of SMP:

> *"In electronic communications markets, competitive constraints may come from innovative threats from potential competitors that are not currently in the market. In such markets, the competitive assessment should be based on a prospective, forward-looking approach."*[54]

In light of the above, EE believes that Ofcom should (irrespective of its conclusion on market definition) update its *market power* assessment to reflect the evolving competitive constraint posed by OTT services. Furthermore, given that this constraint will almost certainly continue to increase over the duration of the market review period (see below), EE urges Ofcom to consider the sensitivity of its SMP assessment to the plausible alternative whereby OTT services become a sufficient competitive constraint over the period 2015/16 to 2017/18 such that they fall within the relevant product market definition.

3.5 Updating empirical evidence

As Ofcom is aware, Ofcom may review its market power determinations (and ultimately modify SMP conditions imposed) during the course of a review period, including where it concludes that markets identified in an earlier market review are no longer the appropriate markets.[55]

Given that, as Ofcom has recognised[56], the constraint on traditional mobile voice calls will almost certainly strengthen over time (as, *inter alia,* the proportion of customers able and willing to switch to OTT services will increase with continued take-up of smartphones, and as OTT providers continue to make technological advances), should Ofcom ultimately conclude that OTT services do not currently form part of the relevant market EE believes that it would be consistent with Ofcom's statutory duties for Ofcom to:

- ensure that any empirical evidence relied upon for the purposes of its market definition analysis is updated regularly to ensure that Ofcom's assessment of the relevant product market definition does not become outdated and risk a "false positive" assessment of SMP in the future; and
- review its market power determination and SMP remedies if new evidence indicates that OTT services have become a sufficient constraint on the pricing of traditional mobile voice calls.

54 Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services (July 2002), para 80.

55 Section 84 of the Act.

56 Ofcom, MCT Consultation, paragraph 3.90.

4. Remedies

This section sets out EE's key concerns with the SMP remedies proposed by Ofcom. In summary:

- Ofcom has failed to present any reliable evidence that moving from LRIC+ to pure LRIC has provided any material benefits for consumers, and EE considers that the balance of evidence supports any charge control being set above pure LRIC. However, irrespective of these fundamental enduring differences of view, EE considers that Ofcom should at least accept that a pure LRIC approach leaves it no margin for error. In order to minimise the risk that MNOs are left unable to recover their bare minimum LRIC under any new MTR cap, EE therefore submits that it is appropriate for Ofcom to adopt a conservative approach in setting any charge control, both in calculating the costs of an efficient operator (in particular given the large uncertainties in modelling mobile costs at this time, including the future pace of migration to 4G) and determining the profile of MTRs over the charge control period (see section 4.1).
- EE considers that making an immediate one-off adjustment to the maximum MTR benchmark would constitute a serious error of judgment. It would undermine regulatory certainty, being clearly contrary to Ofcom's well established approach and often stated policy preference for glide paths, and would also be inconsistent with the need for a conservative approach (see section 4.2).
- While EE welcomes Ofcom's proposals to extend any charge control remedy to smaller MCPs, we believe that adopting a single uniform benchmark is unjustified given that many smaller MCPs face significantly lower costs than the four MNOs (see section 4.3).[57]

4.1 Pure LRIC cost standard

EE's detailed assessment of the analysis underlying Ofcom's provisional conclusion that the appropriate cost standard is pure LRIC is set out in section 5 and Annex 1 of this response. In summary EE respectfully submits that Ofcom's analysis fails to provide any reliable evidence to support its position.

EE's view remains that the balance of evidence supports any MTR charge control condition being set at a level above pure LRIC. Ofcom's analysis of efficient pricing is flawed as it appears to view its options as limited to a binary choice between LRIC or LRIC+, and to conclude that uncertainty over the actual efficient price level means that it is justifiable to adopt pure LRIC, without

[57] As set out above (see section 3.4), EE also believes that in considering appropriate SMP remedies Ofcom should take into account the evolving competitive constraint to traditional mobile voice calls posed by OTT services, even if Ofcom ultimately concludes that such services do not form part of the relevant product market.

specifically considering which price level from within the potential range would minimise the expected cost of error (see further section 5.1 below).

In any event, it is important that Ofcom recognises that its proposal to select pure LRIC as the relevant cost standard represents the very bottom of the potential range of efficient charges, and that it carries asymmetric risk.

If Ofcom errs by setting charges that are below the actual level of pure LRIC, then mobile operators will be forced to incur a loss on every minute of voice termination they supply. This would seriously undermine economic efficiency, with potential consequences for ongoing investment in mobile services. EE's concerns regarding the impact of Ofcom's proposal to adopt a LRIC cost standard on investment incentives are set out in section 5.3 below. These concerns would be amplified significantly if the implementation of that proposal in fact resulted in MTRs being set at a level below LRIC.

EE notes that Ofcom has previously accepted the presence of asymmetry of risk in relation to investment.[58] Ofcom dismisses this concern in the present MCT Consultation on the basis that "*any potential risk of setting an MTR low would be attenuated by the ability of MCPs to recover costs on the retail side of the market*"[59] (i.e. by the waterbed effect). However, as explained in sections 4.2.5 and 5.3 below, there is now new evidence suggesting a weak or non-existent waterbed effect in the mobile market. In particular, the two academics on which Ofcom has placed most reliance in this area have recently changed their views and found "*that the 'waterbed' phenomenon, initially observed until early 2006, has disappeared over the 10-year period, 2002-2011*."[60] EE therefore considers that it would be erroneous for Ofcom to rely on the potential for mobile operators to recover costs in the retail market in order to reject concerns about MTRs being set too low.

Setting MTRs below MNOs actual variable cost of providing an MCT service may also incentivise inefficient migration by MNOs (and their users) to terminate calls using OTT voice models (e.g. calls to MNO subscribers' mobile handsets via apps rather than calls to 07x numbers). The best interests of mobile users (as well as callers to mobiles and receiving parties) could be harmed if voice call services are replaced by OTT services that do not offer all of the same benefits of the voice call services they are replacing.

Ofcom itself notes in the MCT Consultation that it would be "concerned" if MTRs were set below LRIC at any point during the charge control period since

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58 For example, in the 2007 MCT Statement Ofcom stated: "*Ofcom has noted previously that there is potentially an asymmetry in the risks and impact of setting charges that turn out to be too low. Charge controls which, in practice, fail to enable recovery of efficient costs may have an adverse impact on investment, which would be detrimental to consumers generally. Ofcom has noted that charge controls should not be so tight as to impact adversely prospects for investment*" (para 9.168).

59 Ofcom, MCT Consultation, para 6.98.

60 Genakos, C. and T. Valletti, Evaluating a decade of mobile termination rate regulation, December 2013.

this would not accord with its economic objectives for setting charge controls, namely the need to maximise allocative efficiency, productive efficiency, dynamic efficiency and effective competition.[61] In EE's view this would be wholly inconsistent with Ofcom's duties to encourage investment and innovation, and to ensure that any price control conditions serve to promote efficiency and sustainable competition, and confer the greatest possible benefit on consumers.[62] It would also send the wrong signals to the industry at a time when significant investments are being made to improve consumer experience of making voice calls, including dropped call rates and call set-up success rates. Distortions to incentives to invest in voice related network services could, in particular, undermine Ofcom's stated priority of improving the quality of consumers' mobile experiences.[63]

On the other hand, a charge control level that is set somewhat above pure LRIC will only alter the recovery of fixed and common costs between termination and other services, without forcing MCT services to be supplied below cost. Depending on relative elasticities, this may even lead to charges that are closer to allocatively efficient levels (see further section 5.1). Ofcom itself has accepted that there is no clear evidence that a charge control level that is set somewhat above pure LRIC is necessarily less efficient, and such an outcome would therefore clearly be less harmful than requiring mobile operators to price MCT services below incremental cost. EE believes that there is also no evidence to support any material competition effects from setting termination charges somewhat above LRIC (see section 5.4 below).

In light of the above, EE believes that Ofcom should take a conservative approach to cost modelling and should adopt values in relation to uncertain parameters only where Ofcom has a high degree of confidence that the values so adopted will not lead to charges below the actual level of pure LRIC. In particular, in choosing between low, medium and high scenarios Ofcom should adopt the assumptions that would provide for the higher actual charge level so as to minimise the risk of charges turning out to be below actual LRIC.

This is consistent with the approach previously adopted by Ofcom. For example:

> *"Ofcom believes that the presence of this asymmetric risk also supports a charge control level that is above the midpoint of its range of benchmarks."*
>
> *"The traffic forecasts used by Ofcom to set the price cap correspond to conservative forecasts rather than central estimates. This means that in its judgement about the appropriate level of termination charges, Ofcom has taken values above the mid-point of the feasible range of efficient charge benchmarks. It has done this because of its*

61 Ofcom, MCT Consultation, para 8.77.

62 Sections 3 and 88 of the Act.

63 Ofcom, Consumer experiences of mobile phone calls, Report, 12 August 2014.

> *concerns about the asymmetry of the detriment arising from the charge being too high on one hand, or too low on the other."*[64]

EE notes that Ofcom has also accepted that the presence of an asymmetric risk of this nature requires a conservative approach to be taken in other contexts. For example in relation to setting annual licence fees for 900 MHz and 1800 MHz spectrum Ofcom has stated:

> *"We consider that we should exercise the necessary regulatory judgement by adopting a conservative approach when interpreting the evidence. This is for the following key reason[s]…Asymmetry of risk as between the effects on spectrum efficiency from inadvertently setting ALF either above or below market value, given uncertainty about the correct estimates for market value"*[65]

The real risk of errors is highlighted by the fact that, in EE's view, Ofcom's current modelling approach is likely to lead it to underestimate the LRIC of mobile termination in certain respects (see section 6 below), potentially leading to unintended harm to investment and innovation by mobile operators, to the ultimate detriment of consumers.

As set out below, the need for a conservative approach also weighs in favour of adopting a three year glide path to any new, lower, MTR benchmark, which in any event is vital to avoid undermining regulatory certainty and support efficient investment incentives.

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64 Ofcom, 2007 MCT Statement, para 9.168 and Annex 18, para 18.129. EE notes that in the context of the appeals against Ofcom's 2007 MCT Statement the CC considered that the presence of asymmetric risk did not justify making an adjustment to the "2G cap" approach which it proposed to adopt for setting the MTR charge controls. However, this was based on the particular circumstances of that case, and as the CC noted: "*Ofcom's concern informed its decision to choose charge control levels from the range that its benchmarks had generated. As we have accepted the 2G cap, the question of asymmetric risk does not arise in quite the same way*." The CC was therefore considering whether the issue of asymmetric risk justified "*an adjustment to be made to the 2G cap-derived charge controls*", and was not specifically considering Ofcom's reliance on this issue for the purposes of determining the appropriate benchmarks to choose for its cost modelling. The CC did not rule that such adjustments *per se* were not appropriate, nor that the asymmetric risk acknowledged by Ofcom did not exist or that it was not a relevant consideration to be taken into account by Ofcom when choosing from within a potential range (*Reference under section 193 of the Communications Act 2003: Hutchison 3G UK Limited v Ofcom (Case 1083/3/3/0), British Telecommunications plc v Ofcom (Case 1085/3/3/07*), CC Determination, 16 January 2009, paras 2.9.166 – 2.9.169).

65 Ofcom, Annual licence fees for 900 MHz and 1800 MHz spectrum: Further consultation, 1 August 2014, para 1.34.

4.2 The glide path

In the event that Ofcom ultimately concludes that it is appropriate to reduce MTRs from their current level, EE strongly believes that this reduction should be implemented by way of a three year glide path, rather than a one-off adjustment as proposed in the MCT Consultation. This is because Ofcom's proposed reasoning in favour of a one-off adjustment contains several key errors, which EE details below.

1. Ofcom's proposed approach is inconsistent with its standard regulatory approach and stated policy position

First, Ofcom proposes to depart from its standard approach to telecommunications charge controls, which is reflected in the regulatory expectations of MNOs and which has on numerous occasions been endorsed by relevant appeal bodies, without any adequate justification. It is clear that Ofcom's standard approach in charge control decisions is to adopt a glide path approach. Ofcom has stated that it has a "strong preference" for glide paths, in particular because they provide stronger cost reduction incentives and a more stable and predictable regulatory environment than immediate adjustments.

In confirmation of this, in the CC's 2012 MCT Determination (the "CC Determination")[66], the CC stated:

> *"We note that it is usual practice for Ofcom to use a glide path in its charge control decisions, usually with no one-off adjustment, from regulated prices under one price control period to a new price control period. As it pointed out in its Defence,* ***Ofcom has stated that it has 'a strong preference' for glide paths,*** *rather than [one-off] adjustments, to align charges to costs'. We therefore consider that MCPs would have a reasonable expectation of such a glide path and no one-off adjustment …".*[67] (emphasis added)

Ofcom has explained its preference for glide paths rather than one-off and immediate adjustments in several reviews and charge control decisions. For example, in its 2013 Business Connectivity Market Review Statement Ofcom stated that:

> *"18.101 The benefit of the* ***glide path approach*** *is that it* ***approximates more closely to the workings of a competitive market*** *than one-off reductions, where excess profits are gradually eroded as rivals improve their own efficiency. It also* ***avoids discontinuities in prices over time and leads to a more stable and predictable background against which investment and other decisions may be taken****, by both suppliers and customers.*

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66 *Reference under section 193 of the Communications Act 2003: British Telecoms Plc v Ofcom (Case 1180/3/3/11), Everything Everywhere Limited v Ofcom (Case 1181/3/3/11), Hutchison 3G UK Limited v Ofcom (Case 1182/3/3/11), Vodafone Limited v Ofcom (Case 1183/3/3/11) and Telefonica UK Limited*, CC Determination, 9 February 2012.

67 CC Determination, para 5.96.

> *18.102 This approach **also has greater incentives for efficiency** as it allows the firm to retain the benefits of cost reductions made under a previous charge control for longer. This means that cost reductions feed into price reductions with an intentional regulatory lag. One-off adjustments to prices would reduce the effective regulatory lag, and hence the incentives to reduce costs.*
>
> *…*
>
> *18.104 **This suggests that it is not appropriate, for example, to apply one-off reductions simply because prices at the start of the control are out of line with costs**. One-off reductions may also reduce incentives to invest and make efficiency improvements; they impact on regulatory certainty and stability; and they would not necessarily best reflect the outcomes in competitive markets (whereby surplus profits are gradually eroded). Therefore, **if returns at the start of a control are initially high, cutting the difference between prices and costs via a glide path is generally preferable**.*
>
> *When might we consider starting charge adjustments?*
>
> *18.105 Whilst the above suggests a general preference for glide paths in the context of RPI-X controls, we still considered making one-off adjustments where we considered there to be good reasons for doing so. The circumstances under which they could be appropriate include:*
>
> - *when there are strong allocative efficiency arguments for bringing charges into line with costs sooner (such as where BT's charges for particular services are out of line with cost-orientation requirements); and/or*
> - *where the previous charges were unregulated or were not subject to a charge control and where BT's charges are high relative to costs."* (emphasis added)

Similarly, in the 2014 FAMR Statement Ofcom decided to apply an overall glide path for core rental services because it considered that achieving the benefits in terms of efficiency and competition on the merits earlier were outweighed by the risks to the stability and predictability of the regulatory regime[68]:

> *"6.35 In setting charge controls, particularly where the controls replace similar existing controls (as is the case for these LLU and WLR charge controls), **we have a strong preference for "glide paths",** rather than one-off adjustments. Glide paths involve setting the control so that there is a gradual convergence of prices from the current level to the target level by the end of the control period.*
>
> *6.36 **We generally favour glide paths for two reasons**:*
>
> - ***to provide stronger cost reduction incentives** - one of the features of price cap regulation is that profits may diverge from the level expected at the time when the control was set. The glide path approach generally provides greater incentives for cost efficiency improvement as it allows the firm to retain the benefits of cost reductions made under a previous charge control for longer. By contrast, one-off adjustments to charges reduce the effective regulatory lag, and hence the incentives to reduce costs; and*

[68] Ofcom, 2014 FAMR Statement, Volume 2, para. 6.76.

- ***to promote a stable and predictable regulatory regime*** *- the glide path approach avoids discontinuities in charges over time and leads to a more stable and predictable background against which investment and other decisions may be taken, by both suppliers and customers, in the markets we regulate. For example, if CPs have entered into contracts with up to 2 years' duration, then adjusting charges via a glide path allows CPs time to re-structure their contracts with end-users as the wholesale charges change more gradually.*

6.37 While the above suggests a general preference for the glide path approach in the context of price cap regulation, this does not mean we rule out one-off adjustments in prices where there are good reasons to introduce them. For example, we might make one-off changes if there are strong allocative efficiency or competition arguments for bringing charges into line with cost before the end of the control period. However, in assessing possible one-off adjustments, we would need to balance this against alternative regulatory approaches.

…

6.45 Consequently, it is necessary to consider the speed of adjusting charges for the core rental services. Generally, we have tended to set charges so they adjust gradually and reach the target level by the end of the period for which charges are set, which would mean by 2016/17 for the charge controls we are setting. We have adopted this approach as we generally consider that it strikes an optimal balance between static and dynamic efficiency. However, we would be concerned if adopting this approach undermined the stability and predictability of the regulatory regime contrary to regulatory certainty. In those circumstances, it would be unlikely to strike an optimal balance in terms of static and dynamic efficiency." (emphasis added)

Thus, in summary, in its previous statements Ofcom has made it clear that glide paths, rather than one-off or immediate adjustments, will usually be adopted in charge control decisions. In addition, Ofcom has acknowledged that departing from this approach could potentially affect perceptions of the stability and predictability of the regulatory regime. Consistent with this, Ofcom has stated that its "strong preference" for glide paths will only be over-ridden where there are strong reasons for doing so (i.e. which are sufficient to outweigh the harm from the loss in perceived regulatory stability).

EE submits that this approach by Ofcom does and should effectively place the burden of proof on any party wishing to argue against a glide path. EE's view is consistent with the position taken by the CC in the CC Determination. As referred to above, the CC stated that mobile operators could have a "reasonable expectation" that there would be a glide path and no one-off adjustment. The CC considered that this expectation could only be over-ridden if justified on the basis of one of a number of arguments put forward by BT– i.e. that "*BT's 'positive arguments' had sufficient force to overcome Ofcom's reasons for not including a one-off adjustment*".[69] Whilst the CC decided that Ofcom had erred in determining the length of the glide path, it upheld Ofcom's decision not to make a one-off adjustment to MTRs as it determined that none

[69] CC Determination, para 5.97.

of BT's arguments provided a valid reason to depart from Ofcom's standard approach (and similarly EE notes that they do not apply on this occasion).[70]

In the present case, Ofcom's current MCT Consultation discloses no positive case in favour of the need for Ofcom to make a one-off adjustment to MTRs as is being proposed by Ofcom. Moreover, none of these previous statements or Ofcom's standard position is referred to or discussed in the section of the MCT Consultation which addresses the glide path issue. EE respectfully submits that this suggests that Ofcom may in fact have failed to have regard to or to properly take it into account its well-established approach in respect of this issue.[71]

Instead, rather than starting with a presumption in favour of regulatory certainty through the adoption of Ofcom's standard glide path approach, Ofcom essentially does the opposite, without any satisfactory explanation as to why it has felt the unusual need in the present case to turn matters on their head. For example:

- In paragraph 8.68 of the MCT Consultation, Ofcom states that *"given the overall benefits of setting MTRs at LRIC for consumers (as discussed in section 6), Ofcom's starting position is that MTRs should be set at LRIC as quickly as is reasonable and proportionate"*. Assuming of course that Ofcom has conducted the correct market analysis, imposed the right SMP remedies and adopted the correct cost standard in any charge control it imposes, it will always ultimately be in the best interests of consumers for the relevant SMP charges to be regulated to the relevant cost standard. In and of itself, however, this fact cannot displace Ofcom's presumption in favour of using a glide path to achieve this outcome.
- In the following two sub-sections of the MCT Consultation Ofcom then explains why it considers that neither the need to allow sufficient time for adapting to MTR reductions by mobile operators, nor the risk of setting MTRs below pure LRIC, provides any good reason for *not* adopting an immediate adjustment. As a result, Ofcom proposes to adopt an immediate adjustment.

In EE's submission, this reversal of the burden of proof represents an unjustified and unreasoned departure from Ofcom's standard approach, which would be clearly open to challenge in the unfortunate event that Ofcom did not see fit to reconsider its current position.

2. Ofcom fails to balance the costs and benefits of adopting a glide path

Second, and relatedly, Ofcom's approach fails to have regard to the fact that its decision as to the appropriate remedy must be guided by the principle of

[70] CC Determination, paras 5.96-5.104.

[71] For example, in contrast to the FAMR Statement (para 6.48), there is no indication in the MCT Consultation that Ofcom has had regard to its previous statements in considering how its proposals might affect perceptions of the stability and predictability of the regulatory regime.

proportionality, which requires both the benefits and costs of a faster change in MTRs to be balanced against one another. Section 47 of the Act makes it clear that Ofcom is not empowered to set an SMP condition unless Ofcom is satisfied that the condition is proportionate.

The approach proposed by Ofcom in the MCT Consultation does **not** balance costs against benefits. Instead, Ofcom takes a binary approach in respect of benefits, simply noting that in its view there are some benefits of reducing prices to LRIC. Ofcom uses this to justify its position that an immediate adjustment should be made unless there is some good reason to adopt a glide path, and one of the main reasons why it finds that no such reason exists is the fact that the additional revenues that would flow from a glide path approach are relatively small.[72]

In taking this approach Ofcom has avoided any sort of quantitative balancing of costs against benefits of faster changes in MTRs, as required by the principle of proportionality. In EE's case, the difference between adopting a one-off adjustment as compared to a glide path approach means a net revenue reduction of approximately [✂] (based on 2013 volumes). Such amounts are clearly non-trivial. EE also believes that, in order to better understand the disruptive impact of the adjustment to MTRs, net termination payments should be considered by reference to individual operators (not on an industry-wide basis) and compared to each operator's EBIT, which is a more relevant measure for mobile operators that have capital intensive businesses than revenues or EBITDA.

In any event, the fact that the reduction may be relatively smaller than the reductions caused by Ofcom's previous MTR charge control reviews does not absolve Ofcom from the requirement to engage in a full and complete proportionality assessment. A relatively smaller reduction is also no reason to automatically prefer a one-off adjustment to a glide path approach: to the extent that the costs of the one-off adjustment will be smaller then so too will be the benefits – they must still be weighed together and contrasted with the net impact of adopting a glide path.

Moreover, as noted in section 4.2.1 above, Ofcom fails to acknowledge that the mere fact that reducing prices to its new estimate of LRIC produces some consumer benefits cannot in itself justify changing prices immediately rather than through a glide path. Ofcom's position over a number of years has been that reducing SMP prices to the relevant regulated cost standard will generally produce consumer benefits, and yet its standard position has nonetheless been that due to the countervailing benefits of regulatory certainty and providing appropriate efficiency incentives to regulated firms, these prices reductions should be implemented gradually via a glide path – unless there are good reasons capable of overriding this strong preference. Given Ofcom's assessment that the price changes are small relative to those in the previous charge control, this implies that any benefits of reducing prices to its new LRIC estimate (at all or faster) will also be relatively small, and therefore that these

[72] Ofcom, MCT Consultation, paras 8.74 and 8.75.

benefits are unlikely to be of sufficient significance as to justify departing from Ofcom's standard glide path approach.

It also appears that Ofcom has incorrectly taken reasoning used by the CC in considering the appropriate length of the glide path, and applied this to the separate issue of whether a glide path in itself is appropriate. In the CC Determination the CC considered that the relatively small impact of adopting a three year rather than four year glide path on MNOs' revenues and EBITDA meant that a four year path could not be supported on the basis of lower MCP profitability.[73] This was in the context where amendments to the relevant EU regulatory framework in 2009 had introduced a presumption in favour of a three yearly market review period, and consequently in favour of any SMP remedies being set for no longer than this period. Those same unique considerations do not apply in this case. Indeed, in that case the CC expressly noted that "*the Recommendation does not provide any reason to find in favour of or against a one-off adjustment*".[74] In addition, it is clear that the evidence found by the CC in relation to the impact of the charge controls on MNOs' revenues and profitability did not persuade it to accept BT's arguments for a one-off adjustment in that case.[75]

EE believes that the evidence does not show that the relative size of the benefits and costs have changed since the CC Determination in a way that would warrant moving away from a glide path approach. Indeed, new evidence suggests that the costs of a faster reduction are likely to have been underestimated previously (see 4.2.5 below in relation to the waterbed effect). Further, as discussed in section 5, there is no evidence that the adoption of pure LRIC brings any material efficiency or competitive benefits.

Finally, EE considers that Ofcom should take into account the fact that a glide path would achieve a better balance in terms of the timing and realisation of the relative costs and benefits of reducing MTRs to Ofcom's new LRIC estimate. Ofcom's assumed benefits of MTRs being priced at LRIC include lower retail prices for fixed line prices.[76] However, Ofcom has recognised that fixed operators do not pass-through MTR reductions immediately, if at all.[77] In contrast, as explained in this section, a one-off adjustment as proposed by Ofcom would have an immediate detrimental impact on mobile operators' investment incentives. A glide path, by smoothing out the revenue impact on mobile operators, would therefore represent a more appropriate and proportionate approach to implementing Ofcom's charge control conditions.

3. Ofcom fails to consider the justifications it has previously put forward for adopting a glide path

Third, in large part as a result of its erroneous approach, Ofcom has not had regard to a number of the key factors which justify its standard glide path

[73] CC Determination, paras 5.53-5.57.
[74] CC Determination, para 5.104.
[75] CC Determination, paras 5.96-5.104.
[76] Ofcom, MCT Consultation, Annex 9, paras A9.51-9.52.
[77] Ibid.

approach. In the passages set out above, Ofcom explains that its "strong preference" for glide paths is based on the fact that reducing prices over time (rather than through immediate or one-off adjustments): (i) better mirrors a competitive market where any excess profits are gradually eroded; (ii) avoids discontinuities in prices; (iii) provides a more stable regulatory background against which investment and other decisions may be taken; and (iv) provides greater cost reduction incentives, as firms can retain the benefits of cost reductions made in previous charge control periods for longer. All of these considerations apply in this situation, and all support the adoption of a glide path. Yet, none of these factors are identified by Ofcom in the MCT Consultation, and none are weighed against any limited benefits of reducing prices more quickly. This strongly suggests that Ofcom has failed to have regard to these highly relevant considerations.

Among other things, Ofcom does not take into account that the proposed departure from its established approach of using a glide path carries wider risks to the sector and may impact on future investment decisions, in particular as operators will have no certainty as to what size of cost savings would be considered sufficiently "material" by Ofcom to warrant the adoption of a glide path in future reviews. Ofcom's proposal to abandon its previous position is at odds with its statement in the 2014 FAMR statement that:

> *"We consider that an immediate adjustment (moving to the LRIC differential at the start of the charge control period) would tend to undermine the stability and predictability of the regulatory regime, and hence could reduce dynamic efficiency. It would be out of line with our usual approach, which is to make these adjustments gradually via a glide path, which we consider has important advantages as set out earlier in this section. We have therefore decided that* ***an immediate adjustment would not strike a good balance in terms of overall efficiency, because it would tend to undermine the perception of stability and predictability of the regulatory regime"***[78] (emphasis added)

It is, furthermore, clear that none of the justifications set out by Ofcom in its previous statements for departing from its preferred approach of adopting a glide path (e.g. if there are strong allocative efficiency or competition arguments, or where charges were previously unregulated and are high relative to costs) apply in this case. For example, Ofcom acknowledges elsewhere in the MCT Consultation that there are no clear allocative efficiency reasons for ensuring that termination charges are in line with pure LRIC.[79]

4. Ofcom fails to consider the potential impact of a one-off adjustment on mobile operators' ability to recover customer acquisition costs

Fourth, Ofcom's 2014 Communications Market Report shows that 60% of pay-monthly sales had a minimum contract period of 24 months.[80] Yet in the MCT Consultation, Ofcom appears not to have taken into account the fact that, in relation to contracts where the customer is provided with a mobile handset, a

78 Ofcom, FAMR Statement 2014, Volume 2, para 6.44.
79 Ofcom, MCT Consultation, para 6.42.
80 Ofcom, Communications Markets Report 2014, p.361.

minimum contract period of two years over which the cost of this device and other relevant customer acquisition costs are recovered is now common in the industry.

As noted in the CC Determination, mobile operators need to be given the opportunity to recover their customer acquisition costs over the life of their relevant customer contracts. This ability would be imperilled if the mobile operators sought to compensate for the steep cuts in the MTR in the first year of the charge control as currently proposed by Ofcom by increasing their retail prices to existing customers – as the price changes would then be likely to enable users to cancel their contracts without penalty before the minimum term.[81]

Ofcom has acknowledged the relevance of similar considerations in its recent FAMR Statement:

> *"For example, if CPs have entered into contracts with up to 2 years' duration, then adjusting charges via a glide path allows CPs time to re-structure their contracts with end-users as the wholesale charges change more gradually."*[82]

A failure to adopt a glide path could have several potential consequences, to the detriment of consumers. For example:

- As explained in section 4.2.5 below, [✂].
- General Condition 9.6 limits the extent to which MNOs can pass through unanticipated cost shocks into price increases on fixed term contracts (where such price increases would represent a material detriment).[83] [✂].
- [✂].

Accordingly, EE submits that the risk of disruption to customer pricing causing unrecoverable losses by the regulated mobile operators and the desirability of a consistent approach across both the fixed and mobile industries in this regard also supports Ofcom's traditional glide path approach to the regulation of MTR charges.

81 CC Determination, paras 5.58-5.63.
82 Ofcom, FAMR Statement 2014, Volume 2, para 6.36.
83 [✂].

5. Ofcom fails to consider new evidence which calls into question the existence of a strong waterbed effect

Fifth, Ofcom's glide path assessment does not have regard to recent evidence relating to the waterbed effect. The CC Determination, which was in favour of a three year rather than four year glide path, reflected the view that the impact on operator profitability would be moderated by the existence of a strong waterbed effect (i.e. meaning that a large proportion of any reductions in mobile termination revenues could be recovered in the retail market).[84]

However, the authors of the study which the CC relied upon for this view have now published a new study putting forward evidence that the waterbed effect may in fact have ceased to exist in the UK from 2006 (see further section 5.3 below). At a minimum, evidence of a significantly incomplete waterbed effect should be acknowledged by Ofcom as indicating that there is a real risk of a reduction in mobile operator profitability as a result of any reduction in the MTR.[85] Moreover, this is at a time when profitability is low and, as acknowledged by Ofcom[86], MNOs simultaneously face heavy investment requirements to maintain and improve the quality and innovativeness of the services they offer to UK consumers at a key time of technological change.

[✂].

Ofcom is currently proposing that at the start of the new charge control period it will reduce termination charges to its new estimate of LRIC, which will reflect technology investments made by operators as recently as the year before the new period. With the evidence now suggesting that the waterbed effect may be substantially incomplete, Ofcom's new proposal will reduce the expected returns mobile operators will make and can, in turn, invest.

EE firmly believes that any lowering of the expected return on capital employed by MNOs below the levels that they are likely to have assumed for their business planning purposes carries a strong risk of causing harm and disruption to the MNOs' investment plans based upon those expected returns (as explained in section 5.3), and consequently warrants the retention of a three year glide path by Ofcom, as per Ofcom's standard practice and as per Ofcom's approach in relation to the most recent MTR charge control following the CC Determination.

6. The risk of imposing MTRs below LRIC justify a glide path

Sixth**,** Ofcom dismisses a concern that charges may end up below LRIC on the grounds that, were this to transpire, Ofcom would be likely to make a one-off re-

84 CC Determination, para 5.52.

85 This is supported, for example, by the constraints imposed on retail price increases by General Condition 9.6 (as noted in section 4.2.4 above), as well as the need to shield customers from bill shock, which mean that in practice it can be difficult to restore profitability via retail price increases immediately.

86 Ofcom, MCT Consultation, para 8.72.

adjustment to re-align charges with LRIC. EE is very concerned about the harm to regulatory and investor certainty entailed in this proposal.

Put simply, bumpy, unstable and uncertain regulation of charges is one of the worst things that a national regulator can do to harm investor and market confidence. One of the underpinning tenets of the European Commission's 2013 recommendation on costing methodologies to support the broadband investment environment is the need for transparent, consistent, predictable and stable regulated pricing. These requirements are equally true in relation to the huge investment required by UK MNOs to support their 4G mobile broadband roll-out and enhancement plans as they are in relation to the investment plans of fixed broadband providers.

Estimating the level of LRIC is subject to significant uncertainties – even over the next 6-12 months – including as to how quickly customers will migrate to 4G, the introduction of new technologies and the level of the cost of capital as financial markets recover. Better information to reduce these uncertainties will only become available over time. As a result of these uncertainties EE considers that an immediate adjustment at the start of the new regulatory period would carry a significant risk of charges being below actual LRIC.

A one-off adjustment to a LRIC estimate that might then need to be reversed (in whole or in part) a few months into the new charge control period would be highly impractical and cause substantial disruption to pricing and investment planning as well as costs to mobile operators in changing tariffs and the marketing of those tariffs. In addition, it would send adverse signals regarding regulatory instability to any potential investors in the UK mobile market.

As set out in section 4.1 of this consultation response, the risk of harm in under-estimating LRIC is materially greater than the risk of over-estimation. The only safe way to cater for this asymmetric risk without causing irreparable harm to investor confidence and certainty is to set any charge control according to a conservative glide path.

7. The current MCT market review can be distinguished from Ofcom's 2013 narrowband market review

Finally**,** there are important differences between the case for a glide path in relation to the proposed new MTR controls and whether there should have been a glide path in relation to fixed termination rates ("FTRs") in Ofcom's fixed narrowband market review of 2013.

The outcome of the 2013 NMR was to bring FTRs to LRIC for the first time and thereby achieve regulatory consistency with MTRs which had been set at LRIC from April 2013 (and in the context where the regulation of FTRs had already fallen behind the schedule for the introduction of LRIC by the European Commission's recommendation). This differs from the current MCT review which is to update MTRs to reflect changes in costs rather than Ofcom changing its pricing approach.

At the same time as reducing FTRs in the NMR, Ofcom also increased the cap on fixed wholesale origination rates, thereby moderating any impact on

investment.[87] In addition, Ofcom delayed the initial introduction of LRIC for FTRs from 1 October 2013 to 1 January 2014 to enable fixed operators to carry out administrative changes to implement the new pricing.[88] Ofcom also noted a further special consideration in relation to FTRs in that there were players that intended to launch services on the basis of the proposed new FTRs which would be harmed by undue delay.[89]

EE accordingly believes that the approach Ofcom took in relation to the charge controls under the NMR are distinguishable from the situation that will apply in relation to any new MTR charge control, such that there is no reason on the basis of Ofcom's approach in the NMR for Ofcom not to adopt a standard three year glide path for MTRs.

4.3 Remedies for smaller MCPs with SMP

EE supports the proposal to extend the charge control to all smaller MCPs that are designated as having SMP (now extended to 82 smaller operators).

This proposal represents a significant improvement over the current arrangement. We wholeheartedly agree with Ofcom that the current "fair and reasonable" SMP condition and "fair and reasonable guidance" applicable to smaller mobile operators has failed to adequately incentivise those operators to charge MTRs no higher than the benchmark MTR applicable to the MNOs. Many small MCPs have been charging significantly above the benchmark MTR, in some cases up to 30ppm[90], and around 30% of those designated as having SMP in 2011 have charged 10ppm or more (1176% of the current regulated MTR cap).[91]

However, EE still considers that there remains a strong argument that smaller operators should not receive the maximum MTR applicable to the four MNOs because in most cases the smaller operators' costs of terminating calls will be substantially lower. For example, EE is not aware that any of the 82 MCPs listed in Part 1 of Schedule 1 of the proposed SMP Conditions[92] have a mobile radio access network ("RAN") or core network that would justify recovery of costs using the maximum MTR.

EE therefore believes that all smaller MCPs should, *prima facie,* be regulated at a lower rate to reflect their lower cost base and should only be permitted to move to the higher MTR benchmark if they are able to demonstrate to Ofcom that this is justified on the basis of their efficiently incurred costs. For example:

- Smaller MCPs that have negotiated a national roaming or mobile virtual network operator ("MVNO") deal with an existing MNO will be likely to pay domestic roaming charges for at least some voice traffic based on

87 Ofcom, NMR Statement 2013, para 11.10.
88 Ofcom, NMR Statement 2013, paras 11.13-11.14.
89 Ofcom, NMR Statement 2013, para 11.6.
90 Ofcom, MCT Consultation, Table 6.
91 Ofcom, MCT Consultation, para 5.104.
92 Ofcom, MCT Consultation, Annex 7.

the host MNO's RAN operating costs, and therefore may justify receiving the maximum MTR benchmark (at least for some traffic).

- For pure OTT operators the default lower rate should in principle be set at the benchmark FTR, in accordance with Ofcom's 2011 guidance on fair and reasonable MTRs for smaller MCPs[93] (although see below a suggested modification to this benchmark which could be made to reflect practical concerns previously raised by Ofcom).

EE notes that all MNOs with SMP must submit vast amounts of information to Ofcom's MCT market review every 3 years in relation to their current and planned network deployment, asset counts and costs. EE therefore considers it would be proportionate for Ofcom to require smaller mobile operators with SMP to provide at least basic network / contractual agreement information to justify cost recovery up to the maximum MTR benchmark. The compliance burden on Ofcom could be reduced by setting the default MTR cap for smaller mobile operators at an appropriate lower rate below the MTR, with the onus on the operator to demonstrate their entitlement to the full MTR to Ofcom's satisfaction through relevant network / contractual evidence (see further details below).

Based on the evidence presented by Ofcom payments to smaller MCPs at the maximum MTR benchmark amount to an overpayment above the FTR benchmark of approximately £4.46 million per annum.[94] Depending on whether the smaller MCPs use this overpayment to reduce their own prices and/or retain it as higher profits, the overpayment risks distorting competition and a loss of consumer surplus.

A cost benefit assessment would support Ofcom implementing this approach provided that the administrative costs involved (i.e. in requiring smaller MCPs which wish to charge the maximum MTR benchmark to submit basic cost information and evidence to Ofcom) are likely to be less than the costs from distorted competition and lost consumer surplus. EE believes this would be the case.

EE further considers that if Ofcom were to apply a uniform maximum MTR to the MCPs listed in Part 1 and Part 2 of Schedule 1 of the proposed SMP Conditions, despite the significant variances in their underlying costs, this would risk contravening Ofcom's statutory duty to ensure that any SMP conditions are "*not such as to discriminate unduly against any particular persons or against a particular description of persons*".[95]

EE therefore proposes the following approach:

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93 Ofcom, Wholesale mobile call termination: Guidance on dispute resolution in relation to fair and reasonable charges, 5 April 2011.

94 Calculated on the basis of: (i) c.11 billion total net terminated minutes in 2015/16 (footnote 196 of the MCT Consultation); (ii) smaller MCPs making up c. 5% of total MCT minutes (para 5.106 of the MCT Consultation); and (iii) the difference between the current MTR and FTR of 0.812ppm (para 5.118 of the MCT Consultation).

95 Section 47(2) of the Act.

- Smaller MCPs seeking to charge the maximum MTR benchmark should be required to submit a copy of their national roaming / MVNO contract (including the price) to Ofcom to confirm that they incur network related MTR costs. We consider this to be a reasonable requirement that involves limited administrative costs for Ofcom and places low regulatory burden on smaller mobile operators. Because national roaming / MVNO deals are costly to negotiate this will also discourage arbitragers.[96]
- If a smaller new entrant MCP decides to invest in a localised mobile RAN, they should be required to submit information on their RAN investments. RAN investments would need to be substantiated according to site location, as well as equipment at that location such as masts, antennas, BTS, BSCs, NodeBs, RNCs and eNodeBs and any core network including a mobile switching centre.
- While in principle we consider that the remaining pure OTT providers should only receive the FTR benchmark, a practical solution (also in line with Ofcom's guidance on fair and reasonable MTRs for smaller MCPs) would be to allow remaining small MCPs with SMP to receive a blended 50:50 MTR/FTR which would allow for cost recovery for all remaining pure OTT as well as possible hybrid models that don't fit into the two categories above. Whilst this would be likely to allow pure OTT providers to over-recover their costs, it would lower the risk of arbitrage and mitigate the risk that any remaining hybrid MCPs would not be able to recover their costs.

96 [✂].

5. Cost standard for the proposed MTR charge controls

As noted in section 4 above, EE does not believe that pure LRIC regulation is justified. This section sets out EE's detailed views on the analysis set out in section 6 and Annex 9 of the MCT Consultation, in which Ofcom assesses two options for the appropriate cost standard – LRIC and LRIC+.

EE broadly agrees with the framework for assessment proposed by Ofcom[97], the application of which is, in particular, necessary to ensure that Ofcom's proposed charge control conditions:

- are objectively justifiable in relation to the networks and services to which they relate[98];
- are appropriate for the purposes of promoting efficiency and sustainable competition, and conferring the greatest possible benefits on end users[99]; and
- take due account of the extent of the investment in the matters to which the conditions relate of the persons to whom it is to apply.[100]

However, as explained below, EE respectfully submits that Ofcom's analysis against this framework contains a number of errors and omissions, and that the analysis presented cannot be relied upon to conclude that LRIC is the most appropriate cost standard to achieve Ofcom's statutory duties.

EE's key concerns highlighted below are as follows:

- Ofcom has incorrectly considered that its options are limited to a binary choice between LRIC and LRIC+, without considering other levels within the potential range of efficient cost standards (see section 5.1);
- Ofcom's analysis of the effect of moving to pure LRIC in 2011 on consumer prices and usage levels is flawed as it does not apply the correct counterfactual (see section 5.2);
- Ofcom's analysis of the impact of pure LRIC on investment incentives fails to consider the impact of reduced termination revenues on mobile operators' returns on capital employed (see section 5.3); and
- Ofcom has failed to present any convincing evidence that the move to pure LRIC has had any material beneficial impact on competition (see section 5.4).

EE continues to believe that the balance of evidence supports MTRs being set above pure LRIC, in particular given that Ofcom has failed to present any reliable evidence of an increase in competition or benefits to consumers that would outweigh the detrimental impact of pure LRIC regulation on investment incentives (see section 5.5). In any event, if Ofcom ultimately does decide to

97 Ofcom, MCT Consultation, para 6.18.
98 Section 47)(2)(a) of the Act.
99 Section 88(1)(b) of the Act.
100 Section 88(2) of the Act.

continue with pure LRIC regulation, it is important that Ofcom recognises that this carries asymmetric risk which warrants Ofcom taking a conservative approach to other aspects of its market review, for the reasons set out in section 4 above.

5.1 Economic principles on efficient recovery of common costs

Ofcom acknowledges that Ramsey pricing principles should minimise pricing distortions caused by the need to recover common costs as well as incremental costs but proceeds to argue that:

> *"The more efficiently common costs can be recovered from the retail side of the market, the more the Ramsey mark-up on MTRs would be reduced, all else being equal. Thus the existence of non-linear pricing on the retail side of the market may suggest that the optimal MTR is nearer LRIC than the LRIC+ that might be produced from a simple costing rule (such as an equal proportionate mark-up (EPMU) or an allocation based on routing factors). While in theory Ramsey pricing models can be adapted to accommodate non-linear pricing, this further adds to the modelling complexity and such models are likely to be especially difficult to calibrate and prone to spurious accuracy."*[101]

EE agrees that efficient recovery of common costs would require Ramsey pricing taking into account non-linear pricing. However, in the absence of an attempt to estimate this price level, consideration should be given to the potential range for the efficient price level:

- At the extreme minimum of this range is pure LRIC, which would only be consistent with the efficient recovery of common costs if the demand for mobile retail services were perfectly inelastic.
- The upper end of the range could be considered as a simplified version of Ramsey pricing that ignores that there are subscription charges as well as usage charges.
- It should be noted that this upper end could be significantly in excess of a LRIC+ level based on a simple costing rule (such as equal proportionate mark-ups or routing factors). For example, this could be the result if demand for MCT services were significantly more inelastic than demand for mobile retail services, or if a significant share of any reduction in MTRs was not passed through by fixed operators.[102]

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[101] Ofcom, MCT Consultation, para 6.30.

[102] If MTR reductions are not passed through by fixed operators into lower fixed-to-mobile prices, fixed-to-mobile call volumes will be relatively unaffected. Under these circumstances, economic efficiency would argue for a larger share of fixed and common network costs to be allocated to the MCT service and a smaller share to retail mobile services (since this allocation minimises distortions in consumption from not pricing at marginal cost across both wholesale and retail mobile services).

While Ofcom states that non-linear pricing *may* suggest that the optimal MTR is closer to LRIC than LRIC+, Ofcom has presented no analysis to assess where the efficient level is within the range described above. Indeed, on the basis of the information presented by Ofcom, the efficient MTR could well be at or above LRIC+, rather than close to LRIC. For example, a recent academic paper by Jullien, Rey and Sand-Zantman confirms that with elastic demand for subscription the welfare maximizing termination charge is above LRIC.[103] Ofcom's evidence of limited pass-through by fixed operators also increases the likelihood that a charge level above LRIC would best promote overall consumer benefits.[104]

EE believes that it is incumbent upon Ofcom to give greater consideration to the appropriate response to this uncertainty as to where the most efficient cost standard is within the potential range. In the absence of greater information, and presented with the asymmetric risk of setting charge controls too low (see section 4.1 above), a regulator that is seeking to minimise the risk of error might be expected to adopt a value from the upper end of the estimated range for an uncertain parameter. In contrast, Ofcom is currently proposing to adopt the extreme minimum of the range for the choice of the overall cost standard - which is of most importance for the level of the final charge - despite both Ofcom and the CC acknowledging that economic evidence is inconclusive as to the most efficient level.[105]

EE therefore believes that Ofcom has erred in viewing its options as limited to a binary choice between LRIC or LRIC+, and by considering that uncertainty over the actual efficient price level justifies the adoption of pure LRIC without further consideration of which level from within the potential range of efficient charges would minimise the expected cost of error. As a result, Ofcom's approach exposes it to an avoidably high risk of regulatory error and consequent harm to efficient investment and overall consumer welfare.

5.2 Reliability of Ofcom's empirical analysis

Annex 9 of the MCT Consultation presents Ofcom's review of the evidence of the impact of LRIC on prices, subscription and usage from 2011. Ofcom's analysis is based on a comparison of market outcomes in 2011 with those in 2013. However, the fundamental flaw in this approach is that the analysis does not control for other changes in the market so as to estimate the specific issue

[103] Jullien, B., P. Rey and W. Sand-Zantman, "Termination fees revisited", March 2012.

[104] Ofcom, MCT Consultation, Annex 9, para A9.52. See further Annex 1 to this response.

[105] EE also notes that in Annex 16 Ofcom recognises that its estimate of the LRIC+ of 4G may be too low but, surprisingly, Ofcom has not investigated this further. This suggests that the range in which efficient charges may lie is greater than suggested by Ofcom's LRIC+ and LRIC estimates. Accordingly, there is a greater risk that in setting charges at LRIC, the charges may be significantly away from the actual efficient charge level with consequent harm to allocative efficiency.

of whether outcomes would be better for efficiency and end-users under LRIC or some other cost standard.

The correct counterfactual for Ofcom's analysis is not 2011 prices and usage, but an estimate of what prices and usage would be *today* if a higher MTR level had been allowed by Ofcom in its previous market review. Ofcom acknowledges this problem, but does not make any adjustments in its analysis to address it.[106]

EE notes that Ofcom has recognised elsewhere the importance of considering the counterfactual of how a market would otherwise develop in assessing the impact of regulation.[107] This is also in accordance with Ofcom's guidelines on conducting impact assessments:

> *"Only costs and benefits that would be reasonably incurred as a result of an option being implemented (as opposed to costs and benefits that would be incurred anyway) should be taken into account."*[108]

Annex 1 to this response sets out a number of additional comments on Ofcom's empirical analysis, which indicate that the analysis set out in the MCT Consultation may not accurately reflect the impact which pure LRIC regulation has had on pricing and usage of mobile services in practice, nor the extent to which consumers may have benefitted as a result of any pass through of reduced MTRs to fixed-to-mobile retail prices.

For these reasons, EE strongly agrees with Ofcom that it is "*difficult to draw any further conclusions on allocative efficiency from these results*".[109] In EE's view the evidence presented by Ofcom can provide no basis for selecting pure LRIC over other potential cost standards.

5.3 Impact on investment

In the section of the MCT Consultation which addresses dynamic efficiency and investment, Ofcom argues that pure LRIC regulation allows for recovery of the cost of capital (albeit only incremental capital costs). Ofcom also argues that any impact of pure LRIC regulation on investment would be small as net termination revenues are small relative to revenues and EBITDA in the mobile industry, noting capex levels have not fallen in the transition to LRIC.[110]

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[106] For example: "*We recognise that the empirical evidence on retail pricing and usage may have been affected by other factors such as changes in consumer preferences (e.g. greater use of data) and reductions in network costs. Moreover, the effects of the change in termination rate may be muted by the fact that MTRs were moved to LRIC over a glide path.*" (Ofcom, MCT Consultation, Annex 9, para A9.2).

[107] See, for example, Ofcom, Application of spectrum liberalisation and trading to the mobile sector – A further consultation, Annex 9.

[108] Ofcom, Better Policy Making: Ofcom's Approach to Impact Assessments, 21 July 2005, para 5.30.

[109] Ofcom, MCT Consultation, para 6.43.

[110] Ofcom, MCT Consultation, paras 6.45 to 6.54.

EE disagrees with Ofcom's arguments. Examining actual capex levels does not show whether investment would have been higher (or by how much) had LRIC+ been maintained. Ultimately what matters for investment is whether regulation pushes the expected return on investment below the level required for operators to recover their cost of capital. It is a requirement of the Access Directive for regulators to ensure that price control conditions allow operators a reasonable return on investments, in particular "*[t]o encourage investments by the operator, including in next generation networks*".[111] Ofcom has ignored both of these requirements in failing to consider the level of returns on capital employed which the industry is currently making (and which its proposals threaten to further reduce).

[✂].

[✂]. EE believes that whether MNOs have had the opportunity to earn a reasonable return on past investments will impact their willingness to invest in the future and should therefore be taken into account in Ofcom's profitability analysis. This should be of utmost concern to Ofcom, since continued low returns risk mobile operators limiting new investments in the UK industry and instead running down their existing assets.

EE notes that Ofcom has found it relevant to consider returns on past investment in relation to fixed regulation. For example, in the 2014 FAMR Statement, Ofcom states:

> *"Setting MPF and WLR charges at no more than the forward-looking costs of maintaining the access network, as [●] proposes, would mean that BT would not be able to recover the sunk costs of creating the access network. Whilst this might appear to be consistent with allocative efficiency, since charges could be set close to forward-looking costs, it would be likely to do serious harm to dynamic efficiency. This is because BT (and potentially other CPs operating in markets regulated by Ofcom) would be unwilling to make sunk investments in future, as they could not be confident of recovering these costs in charges affected by regulation. For this reason, we allow BT the opportunity to recover the sunk costs of the access network in charges, and the RAV is consistent with recovery of these sunk costs."*[112]

Furthermore, EE believes that Ofcom's profitability analysis should properly recognise MNOs' significant intangible assets, particularly in terms of existing customer relationships and goodwill. Operators have incurred significant cost in developing their customer base and managerial know-how over time and these investments continue to provide benefits, including in terms of a higher level of revenues and lower costs than would otherwise be the case. Exclusion of these intangible assets, on which shareholders should legitimately expect to receive a return, leads to Ofcom greatly overstating MNOs' profitability.

New evidence on the waterbed effect

[111] Directive 2002/19/EC, as amended by Directive 2009/140/EC.
[112] Ofcom, FAMR Statement 2014, Volume 2, para 3.35.

EE also considers it important that Ofcom takes into account the fact that, as noted in section 4.2.5 above, academic opinion on the strength of the waterbed effect has changed. A crucial element of Ofcom's arguments that the adoption of pure LRIC would not harm investment in the 2011 appeals was the view that the waterbed effect was strong, based on analysis by Genakos and Valletti which Ofcom considered "*the most recent and reliable attempt…to estimate the size of the waterbed effect in retail mobile markets*".[113]

However, there has been an important development since the last MCT review in that Genakos and Valletti have changed their earlier conclusion:

> *"We re-consider the impact that regulation of call termination on mobile phones has had on mobile customers' bills. Using a large panel covering 27 countries, we find that the 'waterbed' phenomenon, initially observed until early 2006, has disappeared over the 10-year period, 2002-2011."*[114]

Ofcom notes this change in academic opinion, in passing, in Annex 9.[115] However, Ofcom fails to take this into account in other parts of the MCT Consultation. For example, Ofcom's view of a strong waterbed effect continues to feed into its view that any potential risk of setting MTRs too low is attenuated by the ability of MCPs to recover costs on the retail side of the market (see section 4.1 above).

While Genakos and Valletti also note that they did not find evidence of effects on profits (EBITDA) or investment, they accept that this data may not be reliable. Conceptually, if termination charges are reduced and not recovered (in whole or in part) through higher retail prices and there is not a large elasticity effect of much higher termination volumes (of which there is no evidence) then profits must have fallen.

Genakos and Valletti's new finding highlights the risk that pure LRIC regulation could lead to significantly lower returns to investment in the mobile industry than under a higher cost standard, and therefore result in lower investment than would otherwise occur.

In the absence of a complete empirical analysis by Ofcom on the impact of LRIC regulation on retail prices, EE believes that the risk of a significantly incomplete waterbed effect should be taken into account in an overall assessment of the appropriate charge control level, including the extent to which pure LRIC can be expected to push the expected returns on capital employed of the MNOs below the cost of capital.

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113 CC Determination, para 2.593.

114 Genakos, C. and T. Valletti, Evaluating a decade of mobile termination rate regulation, December 2013.

115 Ofcom MCT Consultation, Annex 9, para A9.8.

5.4 Impact on competition

Ofcom's conclusion in relation to competition effects is that:

> *"We consider that LRIC is preferable to LRIC+ in relation to competition effects…Overall, market developments are consistent with competition being somewhat stronger overall under LRIC-based MTRs."*[116]

However, Ofcom has obtained little evidence to substantiate its view that pure LRIC promotes competition. A crucial aspect of Ofcom's argument is the assumption that high use post-pay customers are significant net makers of calls and that:

> *"These characteristics implied that gaining high-use (high-value) customers was therefore important to enable operators to recover the fixed and common costs of operating a mobile business – it would be hard for MCPs with a lower market share to make up for a lack of high-value customers by increasing their share of lower-value customers, as capturing sufficient numbers of these customers to recover fixed costs would be difficult, even though MCPs with a lower market share may have a comparative advantage for lower-value customers with MTRs at LRIC+."*[117]

However, Ofcom is not able to put forward any compelling evidence to suggest that it is in fact the case that high-use post-pay customers are net makers of calls, nor that this "competition for different consumer segments" effect has any material relevance in today's mobile market.

In the CC Determination, the CC concluded that "*we believe that the outbound:inbound call ratio of post-pay customers is only a little larger than 1:1 (their calls are almost balanced)*". The CC did accept that "high-end" post-pay users may be net makers of calls, but stated that it did not have sufficient data to be certain and cautioned against inferring properties of particular customer groups, particularly small groups.[118]

Ofcom states in the MCT Consultation that (as was the case in the 2011 appeals) the data provided in response to its information requests prevents any clear conclusions being drawn on the current balance of calls for customer segments. However, the data that it does have indicates that "*it may no longer be the case that post-pay customers are net-makers of calls*".[119] Nevertheless, Ofcom proceeds to conjecture that "*It may, for example, be the case that*

[116] Ofcom, MCT Consultation, para 6.80.

[117] Ofcom, MCT Consultation, para 6.62.

[118] CC Determination, paras 2.34-2.35.

[119] Ofcom, MCT Consultation, para 6.63. Recent survey evidence suggests that [✂]% of all pay monthly subscribers in the UK retail mobile market are migrations from pay as you go (with the remaining [✂]% pay monthly migrations from other operators) (source: Kantar and GFK surveys, 2014). Given pay as you go customers on average tend to make fewer calls than they receive, this further calls into question whether post pay customers are on average still net makers of calls.

higher-usage post-pay customers spending, say over £20 or £30 a month, are still net makers of calls. If these customers are high value customers then it may be particularly important for MCPs with a lower market share to be able to compete on a level playing field for this segment."[120] However, without any evidence to support this proposition, or to indicate what size this "segment" might be (and therefore how material Ofcom's assumed competition effect might be), EE does not believe that any weight can be placed on this line of reasoning.

EE notes that if post-pay customers in fact have reasonably balanced traffic, while pre-pay customers are net receivers, then under LRIC+ smaller mobile operators would face no material disadvantage in competing for high use post-pay customers, or post-pay customers generally. However, smaller operators would be advantaged in competing for pre-pay customers. As such, the adoption of LRIC could in fact be acting to the disadvantage of smaller operators.

The presence of more balanced traffic profiles than assumed by Ofcom would not only negate Ofcom's competition arguments relating to particular customer segments, but also Ofcom's assumed "market-wide" effect.[121] Ofcom acknowledged this point as part of the 2011 appeals: "*Ofcom accepted that if a smaller network had a balanced traffic position – in terms of the ratio of off-net inbound:outbound calls – these [market-wide] effects would not arise*".[122] As a result, whilst H3G (for example) may have focused particularly on post-pay customers, if those customers are not in fact significant net-makers of calls then H3G would not be disadvantaged from having done so.[123]

Ofcom's third postulated competition benefit of LRIC is in relation to on-net/off-net price differentials. Ofcom argues "*there is still some evidence of on-net/off-net price differentiation although this generally materialises in an indirect way*".[124] The only evidence that Ofcom presents relates to Telefonica and various smaller players such as Virgin and H3G. However:

- An inspection of Telefonica's website does not show any on-net/off-net price differentials including in terms of bundled minutes allowances.
- While some smaller players such as H3G do currently offer such differentials, EE believes that it would be wrong to conclude that their on-net/off-net price differentials have a material effect on competition in the UK market simply by reference to those tariffs.

EE also believes that the evidence on actual market outcomes does not support Ofcom's conclusion on competition effects. In particular, we note:

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120 Ofcom, MCT Consultation, para 6.64.
121 Ofcom, MCT Consultation, para 6.58.
122 CC Determination, para 2.83.
123 EE also notes that smaller operators have the ability to control this to a large extent based on their tariff offerings, for example by offering smaller bundles of minutes as opposed to unlimited calls.
124 Ofcom, MCT Consultation, para 6.68.

- The UK mobile market has been found to be effectively competitive since Ofcom's inception. As a result, any positive effects on competition that may have resulted from pure LRIC regulation would have been marginal.
- Retail price reductions have slowed substantially since LRIC regulation was adopted, despite ongoing falls in unit costs (see Annex 1).
- Ofcom refers to H3G's gain in market share and, remarkably, H3G's higher EBITDA margin as evidence of increased competition. However, EE believes that an intervention that simply favours one provider cannot be equated with increasing competition.[125] In any event, independent analysis attributes H3G's growth in market share to the launch of its all-you-can-eat data plan at the end of 2010.[126] Enders Analysis notes that H3G is now reducing the emphasis in its pricing on unlimited data (which it notes was unsustainable) and that H3G's share of contract net additions fell significantly in December 2013, and further in March 2014, despite termination charges being brought down to LRIC.[127]

In summary, EE does not believe that Ofcom has demonstrated that pure LRIC has brought any material positive effects to competition.

5.5 Overall conclusion on the choice of cost standard

EE's concludes that the balance of evidence indicates that MTRs set somewhere above pure LRIC would be most consistent with Ofcom's statutory duties. In particular, this is based on the following factors:

- Economic theory shows that the efficient MTR level will be in a range between pure LRIC and the level implied by a simplified Ramsey approach (which ignores non-linear pricing and which may be above LRIC+ based on an accounting rule). However, Ofcom proposes to set MTRs at the extreme minimum of this range without properly considering which level within this range would best achieve its duties.
- Setting MTRs at pure LRIC carries asymmetric risk since any errors in cost modelling resulting in an under-estimation of the actual level of LRIC would result in a significant negative impact on economic

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125 Ofcom, MCT Consultation, paras 6.70-6.74.

126 See Mobiletoday "*Three's growth has largely been attributed to its highly competitive unlimited internet proposition*", 13 December 2013 (available at: http://www.mobiletoday.co.uk/news/industry/23577/Three-cools-on-All-You-Can-Eat-4G-data-plans.aspx); The Register, "*Telcos: up your prices, lose customers*", 4 July 2011 (available at: http://www.theregister.co.uk/2011/07/04/telcos_lose_customers_when_increasing_prices/).

127 Enders Analysis, UK Mobile market Q1 2014.

efficiency and investment by forcing operators to incur a loss on every minute of voice termination.

- Pure LRIC threatens investment incentives and dynamic efficiency by further reducing MNOs' returns on capital employed, and the evidence of a strong waterbed effect that Ofcom has previously relied upon to dismiss concerns about the impact of pure LRIC on investment has now been overturned by the authors of the earlier study.
- Ofcom has not presented any reliable analysis to demonstrate that pure LRIC regulation has led to material benefits for end users, nor to an increase in competition.

6. Calculating the efficient costs of MCT

As set out above, EE disagrees with Ofcom's proposed adoption of a pure LRIC cost standard. This section sets out EE's comments on Ofcom's proposed cost modelling on the assumption that Ofcom does, nevertheless, proceed with pure LRIC regulation.

6.1 Continued inclusion of 2G and 3G technologies

EE agrees with Ofcom's proposal to model the cost of MCT on the basis that 2G and 3G technologies will continue to be used in addition to 4G. It is important to recognise that the supply of mobile services is dependent on the technology choices of both operators and customers. Ofcom's cost model shows that for Q1 2014/15:

- only 4% of subscribers are on 4G; and
- 83% of gross adds continue to take 2G and 3G handsets rather than 4G.

Given this context, an operator that chose to offer only 4G services would have a small customer base and higher unit cost than operators supporting all technologies.

This conclusion is highly unlikely to change over the next market review period, particularly as VoLTE-enabled handsets have even lower penetration than current 4G handsets (with 4G handsets being reliant on 2G and 3G technology for voice calling). Further, a 4G-only operator that sought to capture an average share of the market would be likely to need to provide greater subsidies so that 2G and 3G customers would be willing and able to switch to 4G. The cost of the required subsidies would be substantial so that it cannot be assumed that a 4G-only operator would have lower overall costs than the existing operators with their mix of 2G, 3G and 4G technologies.

6.2 The assumed speed of migration to 4G

EE continues to believe that Ofcom's forecast of 4G take-up is overly optimistic.

In EE's response to Ofcom's draft cost model, EE set out evidence that Ofcom's assumed rate of 4G take-up is likely to be too high based on an analysis of 4G take-up in comparable countries and independent forecasts. For example, we noted:

- Ofcom's forecast rate of 4G take-up is significantly above the average of the countries with greater experience with 4G and much higher than take-up rates in other European countries which are likely to provide the best guide for forecasting UK take-up.

- Ofcom forecast of 66% of UK subscribers being 4G subscribers by the end of 2020 contrasts with 4G penetration for Western Europe which has been independently forecast at 36% by 2020.[128]

Ofcom has not modified its forecast 4G take-up to take into account this concern, nor has it responded to the evidence presented by EE.

[✂].

6.3 Weighted Average Cost of Capital

Annex 14 of the MCT Consultation sets out Ofcom's proposed approach for estimating the WACC for an average efficient MCP. Ofcom has proposed a significant reduction in the WACC on a like-for-like basis (i.e. RPI-deflated) from a pre-tax real WACC of 6.2% in March 2011, to 5.5% in June 2014. Ofcom's new WACC estimate is equivalent to a CPI-deflated pre-tax real WACC of 6.9% (which is the expression of the WACC used in the new cost model).

EE comments on Ofcom's assumptions in relation to the following parameters are set out below:

- the equity risk premium ("ERP");
- the asset beta; and
- the risk-free rate ("RFR").

Equity risk premium

Ofcom has estimated an ERP of 5.0%, which is consistent with the ERP estimated in the FAMR 2014. Ofcom states that they "*put most weight on the historical premium of equities over government bonds*".[129]

However, EE is concerned that Ofcom is highly likely to understate the cost of equity because of its particular approach to the selection of historical average and forward looking information. While historical averages can provide useful information, it is important that all sources of information are taken into account in the round, and that a reasonable overall market return is estimated. In EE's view, Ofcom needs to identify the best forward looking estimate of the cost of capital for the service over the regulatory period.

As explained below, EE has particular concerns with:

- Ofcom's failure to give proper consideration to forward looking estimates of ERP, including survey evidence and estimates using the dividend growth model ("DGM"); and
- Ofcom's resulting assumed total market return ("TMR").

(i) Forward looking estimates of ERP

[128] See http://www.statista.com/statistics/232690/4g-mobile-wireless-penetration-in-europe/.

[129] Ofcom, Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 – Annexes, May 2014, Annex 14, para A14.137.

Forward looking estimates of ERP can be obtained from surveys of investors, market participants and academics. An annual survey undertaken by Fernandez, Aguirreamalloa and Linares[130], which is widely referenced by UK regulators (including Ofcom and Ofwat), provides current forward looking estimates of the ERP based on the expectations of professors, analysts and managers. As noted in the MCT Consultation, the latest survey evidence from Fernandez et al (2013) provided a mean ERP of 5.5%. We also note that the Bank of England's Financial Stability Report of June 2014 reports "*estimates of equity risk premia above historical averages for the S&P 500, FTSE All-Share and Euro Stoxx*".[131]

Ofcom should also take into account implied forward looking ERP estimates from the DGM approach when forming an overall view of the appropriate ERP estimate. Recent movements in implied forward looking ERPs suggest that Ofcom's estimate of 5.0% may be a significant underestimate. For example, a series provided by Bloomberg estimates that the average implied ERP was 8.9% over the three month period which followed the CC's final determination for Northern Ireland Electricity Limited's ("NIE") price controls (i.e. 4 April to 4 July 2014).[132] This compares to an average ERP of 8.3% in the first quarter of 2014 and an average ERP of 8.5% over the 12 months preceding the CC's final determination. While there may be differences between the levels calculated by different methodologies, we believe that the increase over recent months is generally informative that Ofcom's earlier assumptions are outdated and consequently too low.

On this basis, we believe an ERP of 5.45% is likely to be more reasonable than Ofcom's assumption of 5.0%. It should also be noted that the forward looking ERP should be considered consistently with a prevailing estimate of the RFR, taking into account the assumed TMR, as discussed below.

(ii) Total market returns

The ERP can also be derived through estimates of TMR. This is an approach that has been strongly endorsed by the CC.[133] Combining Ofcom's estimate of the RFR and ERP provides a TMR estimate of 6.3%. Ofcom notes in the MCT Consultation that this lies within the CC's range of 5.0% to 6.5%. However, the CC point out that the evidence for a TMR at the upper end of this range is stronger than at the lower bound.[134] In fact, within the historical data sample used to support the CC's TMR range, only six of the 40 estimates of the return

[130] Fernandez, P., Aguirreamalloa, J. and Linares, P., Market Risk Premium and Risk Free Rate used for 51 countries in 2013: a survey with 6,237 Answers, 26 June 2013.

[131] Bank of England, Financial Stability Report, June 2014, p.12.

[132] Sourced from Bloomberg's country risk premium function on 6 July 2014.

[133] Bank of England, Financial Stability Report, Issue No. 35, June 2014, Table 1A, p.12.

[134] CC, Northern Ireland Electricity Limited price determination, A reference under Article 15 of the Electricity (Northern Ireland) Order 1992, 26 March 2014 (the "2014 NIE Final Determination") para 13.72.

on equity have a value below Ofcom's TMR of 6.3%, while 31 of the estimates cited by the CC take on a value of 6.5% or higher.[135]

Furthermore, Ofcom does not account for any other recent regulatory decisions. Table 1 below shows recent estimates of TMR from a number of regulatory determinations. Clearly Ofcom's estimate is considerably below these estimates. For example, Ofwat and the ORR both estimate a TMR of 6.75%. This is equivalent to an implied ERP of 5.45% when applying Ofcom's RFR estimate of 1.3%.

Table 1 - Estimates of total equity market returns from recent regulatory determinations

	CC [136] (Apr 14)	Ofwat [137] (Jan 14)	Ofgem[138] (Feb 14)	ORR[139] (Oct 13)
TMR estimate	5.00% - 6.50%	6.75%	6.50%	6.50-6.75%

Source: Various regulatory determinations (see footnotes)

In summary, EE believes that Ofcom's estimate of TMR, and therefore implied ERP, is not in line with either market evidence or recent regulatory precedents. Ofcom should therefore reassess the latest market evidence, including the forward looking estimates, in order to derive an estimate that is more:

- reflective of expected ERP over the review period; and
- in line with the findings of other regulators.

EE believes that, assuming a RFR of 1.3%, **an ERP of 5.45% would better reflect the latest available market evidence**. This would also be consistent with a TMR of 6.75%, which is more strongly supported by regulatory precedents than Ofcom's current estimate (if Ofcom adopted a lower RFR then this would support an ERP in excess of 5.45%).

Betas

Ofcom has estimated an asset beta of 0.54 for an efficient UK MCP. Ofcom's estimate is heavily weighted towards Vodafone's asset beta, which is calculated with respect to the FTSE All-World index. Ofcom also takes account of estimated betas for the parent companies of two of the other three major UK MCPs (i.e. Telefonica, Deutsche Telekom and Orange, but excluding Hutchison 3G as this operator earns revenues from highly diversified activities).

135 CC, Northern Ireland Electricity Limited price determination, A reference under Article 15 of the Electricity (Northern Ireland) Order 1992, 8 November 2013, Table 13.7, p. 13-27.

136 CC, 2014 NIE Final Determination, para 13.161.

137 Ofwat, Setting price controls for 2015-20 – risk and reward guidance, January 2014, p.14.

138 Implied from Ofgem's cost of equity estimate of 6.0% (based on an equity beta of 0.9 and risk-free rate of 1.25%). See: Ofgem, Decision on our methodology for assessing the equity market return for the purpose of setting RIIO-ED1 price controls, February 2014, pp 2, 14.

139 Office of Rail Regulation, Final determination of Network Rail's outputs and funding for 2014-19, October 2013, Table 13.1, p.491.

EE considers that Ofcom's beta analysis is incomplete and inaccurate in a number of areas. We detail each area in turn below.

(i) Choice of equity index

EE considers that Ofcom has not adequately justified its decision to give more weighting towards beta estimates derived from the FTSE All-World index over those derived against the FTSE All-Share index. In the Brattle Group ("Brattle") report titled "*Estimates of Equity and Asset Betas for UK Mobile Owners*", which Ofcom rely heavily on, Brattle justify using the All-World index on the basis that:

> *"i) none of the companies represents a significant % of the All-World index by capitalisation; ii) all four companies pull substantial investment from all corners of the globe, and (iii) all four companies have significant operations spread across the globe."*[140]

EE believes that Ofcom has incorrectly ignored an important reason supporting reliance on the FTSE-All share index. In practice, investors invest heavily in their local markets. A study by Wright, Mason and Miles on the cost of capital for regulated utilities in the UK notes that:

> *"The CAPM rests upon the mean variance approach. The key result there is that the market portfolio contains all the risky assets that exist and that all agents hold these risky assets in the same proportion within their risky portfolios. It is obvious that these assumptions are strikingly at odds with the facts. The major holders of UK stocks are UK institutions (pension funds and life insurance companies). Their portfolios in recent years have been roughly 70% invested in assets issued by UK companies and by the UK government. Overseas assets make up only around 25% of all assets…*
>
> *One pragmatic approach is to take the CAPM as a guide and use as the market portfolio of risky assets a portfolio which reflects the composition of assets held by the dominant owners of the stocks in question. For most regulated UK companies this would imply the relevant portfolio is one with a high weight on UK equities (by which we mean FTSE all share stocks), a significant, but smaller, weight on UK bonds and with smaller weights on Continental European, Asian and US stocks…In practice when estimating betas it is more common to use the returns on an all equity portfolio and to use a domestic stock price index"*[141]

Focusing on the FTSE All-Share index would not only better reflect the actual situation of investors but it would also be consistent with Ofcom's own regulatory practice to date. As noted above, Ofcom placed significant weight on beta estimates using the FTSE All-Share index in the recent FAMR. In explaining its estimate of BT's asset betas for the FAMR, Ofcom stated:

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[140] Brattle, Estimates of Equity and Asset Betas for UK Mobile Owners, June 2014, p.31.

[141] Wright, Mason and Miles, A Study into Certain Aspects of the Cost of Capital for Regulated Utilities in the U.K., 2003, p.13.

> *"Unless stated otherwise, our analysis is based on a comparison of two year asset betas estimated using daily returns against the FTSE All-Share index."*[142]

In the 2011 MCT market review Ofcom also relied heavily on estimates derived with respect to the FTSE All-Share index without placing any weight on alternative indices. Ofcom described the FTSE All-Share index as its "*preferred comparator index*".[143]

Furthermore, EE considers that it is not justifiable or credible to place significantly less weight on an established UK index, on the basis that *"Vodafone's 5% weighting in the FTSE All-Share raises the possibility of enhanced correlation and some uplift to the beta"*[144]. First, EE notes that Vodafone's share of the FTSE All-share index has fallen significantly over time and now accounts for only 2.55% of the FTSE All-share index's net market capitalisation.[145] Second, even if Ofcom were able to demonstrate that Vodafone's size means that such a bias may exist, we note that the market capitalisation of the BT group might equally be considered sufficiently large to raise the possibility of enhanced correlation and some uplift to the beta.[146] However, Ofcom took no account of this in its analysis of BT's beta, from which the betas for BT Openreach and "Rest of BT" were derived in the FAMR 2014.

It therefore appears that Ofcom has taken an inconsistent approach by taking into account a potential correlation with Vodafone, whilst ignoring the same issue in relation to BT. Instead Ofcom chose to derive asset betas for BT using the All-Share index for the purposes of the 2014 FAMR, with limited reference to the All-World index.

Finally, EE believes that Ofcom should give greater weight to the overall evidence on the beta for mobile services specifically. This is discussed in the sections that follow.

(ii) Betas for mobile activities versus other activities

142 Ofcom, Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30, May 2014, Annex 14, para A14.177.

143 Ofcom, Wholesale mobile voice call termination, Modelling Annexes, March 2011, Annex 8, para A8.117.

144 Brattle, Estimates of Equity and Asset Betas for UK Mobile Owners, June 2014, p.13.

145 FTSE Fact Sheet, "FTSE All share indices" July 2014.

146 Whilst BT group's market capitalisation is less than that of Vodafone, the market capitalisation of BT is not insignificant in comparison

Fixed line operators, and operators with a significant mix of fixed and mobile revenues, can be expected to have lower betas than the beta of a mobile-only operator (which should form the basis for a cost of capital estimate for supplying MCT services). A fixed line business such as BT Openreach recovers a significantly greater proportion of its revenue from regulated services in comparison to the average UK MCP. Much of Ofcom's analysis confirms this. For example, as Ofcom acknowledges:

> *"[One] would expect an average efficient UK MCP to be exposed to higher systematic risk than Openreach based on both the evidence from the US telecoms operators considered above and the fact that Openreach is a stable regulated wholesale provider of fixed line telecommunications."*[147]

Ofcom also reports that the average beta for US fixed operators is between 64% and 67% of the average beta estimated for US 'mobile' operators.[148] Indeed, Ofcom uses this data to estimate that the beta of a mobile-only operator would be 0.55.[149] However, there is a flaw in Ofcom's calculation in that the sample of US mobile operators actually contains operators with significant fixed revenues. Including the betas for these operators significantly lowers the estimated average for the mobile operator group. We note that if a line of best fit was instead applied to the entire sample of US mobile, both diversified and fixed operators, this would lead to an asset beta estimate of 0.63 for an operator with 100% mobile revenues and 0.28 for an operator with 100% fixed revenues (i.e. 44% of the beta of the mobile-only operator).

Correcting Ofcom's calculation in paragraph A14.45 for this issue leads to an asset beta estimate of 0.61 for a UK mobile-only operator. This is close to the estimated beta for a US mobile-only operator and significantly above Ofcom's proposed MCP beta.

The four parent companies of UK MCPs considered by the Brattle Group also have significant fixed revenues. As shown in Table A14.2 of the MCT Consultation, the operators with the higher share of mobile revenues have higher asset betas. Applying a line of best fit to this data produces an estimate of the All-Share Index beta for a mobile-only operator of 0.60.

EE have also considered the entire set of asset betas for telecoms operators presented by Ofcom (i.e. the UK MCP parents, the US operators and the additional EU operators) and considered the betas measured more accurately against the relevant local indices. When we apply a line of best fit to this set of Ofcom's data, we calculate an asset beta for a mobile-only operator of 0.65. We believe that this estimate is likely to be the most accurate estimate as it takes into account all of the operator data presented by Ofcom.

An asset beta of 0.65 would also be close to the average asset beta for mobile operators of 0.66 assumed in recent regulatory decisions elsewhere in Europe, as shown in Table 2.

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147 Ofcom, MCT Consultation, Annex 14, para A14.43.
148 Ofcom, MCT Consultation, Annex 14, footnote 120.
149 Ofcom, MCT Consultation, Annex 14, para. A14.45.

Table 2 - Asset betas for mobile operators in recent NRA decisions

NRA decision	Asset beta for mobile services
Malta 2012	0.5-0.7
Greece 2012	0.43* (estimated from equity beta of 0.82)
Germany 2013	0.77**
Finland 2013	0.63-0.71
Norway 2013	0.90
France 2013	0.8
Netherlands 2014	0.49***
Average	**0.66**

Source: NRA websites.[150]

EE believes that **an asset beta of 0.65 is much more credible than the asset beta of 0.54 proposed by Ofcom**, which is only slightly higher than Ofcom's asset beta of 0.50 for BT Openreach despite the fact that mobile operators face substantially higher systematic risks.[151]

A mobile **asset beta of 0.65 together with an ERP of 5.45% would increase Ofcom's pre-tax real WACC (CPI deflation) from 6.9% to 7.9%. This would imply a LRIC of 0.5134ppm**.

(iii) Adjustments for estimation errors

In estimating betas Ofcom has also failed to account for estimation errors that are inherent when deriving beta estimates for MCPs. Beta estimates are known to be subject to a high degree of estimation error.[152] It is therefore prudent to consider whether an easily-implemented adjustment, such as the

[150] *The Greek beta needs to be considered in the context of the regulator's assumed high ERP of 11.88% (i.e. it does not imply that the Greek regulator considers mobile activities to have lower absolute risk than the views of the other regulators). **The German beta estimate does not take into account the upward smoothing of the final WACC estimate by the German regulator. ***The new Dutch beta is under appeal before the Dutch courts.

[151] EE notes that what is required is the beta (and subsequent cost of capital) for supplying mobile services in the UK, as opposed to the beta for diversified international players. The approach proposed above makes an appropriate adjustment for the presence of fixed revenues. However, a further adjustment to the asset beta estimates is also likely to be required to in order to remove the impact of international diversification. As EE's estimate of 0.65 is calculated without making this adjustment, this asset beta should be considered a conservative estimate.

[152] Gray, S., J. Hall, D. Klease, and A. McCrystal, 2009. "Bias, stability and predictive ability in the measurement of predictive risk," Accounting Research Journal, 22, 220–236.

Vasicek (1973) adjustment[153], can mitigate estimation error and thereby increase the reliability of beta (and ultimately cost of capital) estimates.

The Vasicek adjustment shifts the beta estimate towards a prior expectation (typically a beta of one) and the magnitude of that shift is greater when the standard error of the estimate is higher. That is, where the beta estimate is more precise it is given more weight, and when it is less precise it is given less weight.

Ofcom's failure to make adjustments for estimation error, or even consider them, is a significant departure from the adjustments made by major commercial data vendors such as Datastream and Bloomberg, which regulators such as Ofgem[154] and Ofwat[155] have relied upon heavily in recent determinations. The estimates provided by Datastream incorporate a very similar adjustment to the Vasicek adjustment, with a prior expectation of one and the magnitude of adjustment contingent upon the standard error of the beta estimate. Estimates provided by Bloomberg place a one-third weight on a prior expectation of one and a two-thirds weight on the beta estimate.

Whilst the CC decided not to apply an adjustment to estimates of beta they did state that:

> *"As regards a Bayesian or Vasicek adjustment, we accept that such an adjustment could be appropriate if we were estimating the beta for a quoted company (as such an adjustment would combine information on that specific company's beta with information on other companies' betas)."*[156]

EE urges Ofcom to consider the case for making adjustments to its beta estimates. As a minimum, Ofcom should demonstrate and justify why such an adjustment is not appropriate in this case.

(iv) Risk-free rate (RFR)

Ofcom has estimated a real RFR of 1.3%. In estimating a real RFR Ofcom have considered historical averages of the yields for RPI linked gilts, forward rates on those gilts, and regulatory decisions.

We expect that in finalising the MCT Statement, Ofcom will have regard to the latest data on yields, as well as the following:

- Long-dated index-linked yields have remained broadly below 1% for the last five years and current yields on ten-year Index Linked Gilts continue to remain close to zero.

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153 Vasicek, O., 1973. "A note on using cross-sectional information in Bayesian estimation of security betas," Journal of Finance, 28, 1233–1239.

154 Ofgem, Strategy decision for the RIIO-ED1 electricity distribution price control Financial issues, March 2013, p.23.

155 Ofwat, Setting price controls for 2015-20 – risk and reward guidance, January 2014, p.17.

156 CC, 2014 NIE Final Determination, para 13.177.

- Forward curves suggest that long-term risk-free rates are expected to rise modestly over the period 2015-18.
- The CC adopted a range of 1-1.5% for the real RFR in the 2014 NIE Final Determination.[157] In its final determination, the CC noted that:

> *"the lower end of this range is well above current short-term real interest rates (which are negative). In addition, the upper end of the range is well above the long-term rate of interest on Treasury Bills of 1.1 per cent".*[158]

- In coming to its estimate for the RFR, Ofcom notes that a *"degree of caution is required in interpreting the evidence available since a number of temporary distortions may be affecting the data."* This is in contrast to the views expressed by Dimson, Marsh and Staunton that many alleged "distortions" are likely to be permanent and any of these factors are all likely to be well-understood and already built into market rates.[159]

If Ofcom were to update the estimate of the RFR, in light of any further market evidence, this should be taken into account when estimating the ERP (i.e. a higher RFR, all things being equal, should also point to a higher ERP). Ofcom and the CC have previously pointed to evidence that equity market returns are relatively stable over time and therefore an inverse relationship may exist between the RFR and ERP. This was acknowledged by Ofcom in the FAMR Statement, where it noted that it "*continued to believe that there was a link between the ERP and the real RFR*".

The CC has also stated that:

> *"Historically, the market return has tended to be less volatile than the ERP (as measured, for example, by the ratio of standard deviation to mean) and there is some evidence of the ERP being negatively correlated with Treasury Bill rates over the short term."*[160]

We note that Ofcom are now proposing to use the cost of debt as the discount factor for deriving annual licence fees, as set out in its recent further consultation document.[161] We expect to provide our view on the latest evidence on the RFR, and other parameters related to the cost of debt, as part of our response to Ofcom's consultation.

6.4 Release of 700 MHz spectrum

Ofcom's proposed cost model currently does not assume any additional spectrum will be allocated to mobile services. EE believes that this does not

[157] CC, 2014 NIE Final Determination, Table 13.11, p. 13-39.
[158] CC, 2014 NIE Final Determination, para 13.129.
[159] Credit Suisse Global Investment Returns Yearbook 2013, February 2013, p.7.
[160] CC, 2014 NIE Final Determination, para 13.148.
[161] Ofcom, Annual licence fees for 900 MHz and 1800 MHz spectrum: Further consultation, 1 August 2014.

represent the most likely forecast for the future. In particular, on 28 May 2014, Ofcom set out its proposals to make 700 MHz band spectrum available to mobile broadband from 2022, or possibly two years earlier. Ofcom found that the re-allocation of this spectrum to mobile broadband would result in substantial net benefits. EE believes that on the basis of Ofcom's own analysis, the allocation of this spectrum to mobile broadband is the most likely forecast.[162]

In its consultation on the future use of the 700 MHz band Ofcom assumes that a generic operator would receive 2 x 10 MHz of this spectrum.[163] EE has used Ofcom's cost model to estimate the impact of the likely allocation of this spectrum to mobile services on the LRIC of MCT. In particular, we have modelled the operator obtaining an additional 2 x10 MHz of spectrum in the same way that Ofcom has modelled the impact of the 2 x 10 MHz of 800 MHz spectrum for 4G purposes but with the 700 MHz spectrum becoming available from 2022/23 onwards.

We estimate that **the release of new 700 MHz spectrum would increase the LRIC in 2017/18 to 0.5134 ppm**. We regard this as a conservative estimate as spectrum at 700 MHz should bring greater cost savings in future years than the 800 MHz spectrum. Under Ofcom's economic depreciation methodology, cost savings in future years result in the need for more costs to be recovered in earlier years (including over the forthcoming charge control period).

6.5 Summary

EE estimates that **if the release of 700 MHz spectrum is taken into account** (as set out in section 6.4 above) **together with a revised asset beta of 0.65 and revised ERP of 5.45%** (as explained in section 6.3) **then the estimate of LRIC would increase by over 13% to 0.5389ppm**.

Accordingly, we believe that Ofcom's current LRIC estimate is likely to significantly understate actual LRIC.

[162] Consultation on future use of the 700 MHz band: Cost-benefit analysis of changing its use to mobile services, 28 May 2014.

[163] See, for example, para 4.22 of the consultation.

7. Consultation questions and answers

Question 3.1: Do you agree with Ofcom's view of the relevant market? If not, please explain why.

See section 3.

Question 5.1: Do stakeholders agree with our assessment of the harm that would result from a lack of effective competition in MCT markets?

See section 5 and Annex 1.

Question 5.2: Do you agree with our assessment that ex-post competition law would not be sufficient to address the competition problems we have identified, and that therefore deregulation is not a regulatory option?

As set out in section 3, EE considers that it is incumbent upon Ofcom to undertake further analysis to determine the extent to which OTT services exercise a competitive constraint on mobile voice calls, and therefore impact upon mobile operators' market power in MCT. EE also believes that this should be kept under review by Ofcom given the rapid pace of change in the relevant markets, including by regularly updating its empirical analysis.

Question 5.3: Do you agree with our proposal to impose an obligation to provide network access on reasonable request on all MCPs with SMP? If not, please explain why.

EE agrees that a requirement to provide network access on reasonable request is reasonable where a MCP is found to hold SMP.

Question 5.4: Do you agree with our proposal to impose a price transparency obligation on all MCPs with SMP? If not, please explain why.

EE agrees that advance publication of rates is reasonable.

Question 5.5: Do you agree with our proposal to impose a non-discrimination obligation on the four largest MCPs, but not on smaller MCPs? If not, please explain why.

EE continues to believe that undue discrimination can best be regulated through ex post competition law applicable to all players rather than attempting to do so through ex ante regulation on only some players that may unnecessarily restrict pro-competitive behaviour. Whether particular conduct represents undue discrimination needs to be assessed within the specific context in which that conduct is taking place.

Question 5.6: Do you agree that our proposal to impose a charge control on the four largest MCPs is appropriate? If not, please explain why.

See sections 4, 5 and 6.

Question 5.7: Do you agree that our proposal to impose a charge control on all other MCPs with SMP is also appropriate? If not, please explain why.

See section 4.3.

Question 6.1: Do you agree that the above framework is the appropriate one? If not, please explain why.

See section 5.

Question 6.2: Do you agree with our analysis and views on allocative efficiency? If not, please explain why.

See section 5 and Annex 1.

Question 6.3: Do you agree with our analysis and views on dynamic efficiency? If not, please explain why.

See section 5.3.

Question 6.4: Do you agree with our analysis and views on competition impacts? If not, please explain why.

See section 5.4.

Question 6.5: Do you agree with our analysis and views on the impact on vulnerable consumers? If not, please explain why.

See section 5.2 and Annex 1.

Question 6.6: Do you agree with our analysis and views on regulatory and commercial impacts? If not, please explain why.

See sections 4 and 5. EE notes in particular that Ofcom's view that the risks of setting MTRs too low would be attenuated by the ability of MCPs to recover costs on the retail side of the market is inconsistent with recent academic evidence which indicates that the waterbed effect is now substantially incomplete (see section 5.3).

Question 6.7: Do you agree with our proposal that LRIC should continue to be the appropriate cost standard? If not, please explain why.

See sections 4.1 and 5.

Question 7.1: Do you agree with our proposed modelling approach as discussed in this section, the supporting annexes and the 2014 MCT model? If not, please discuss the specific proposals that you disagree with.

See section 6.

Question 8.1: Do you agree with our proposed approach to implementing the MCT charge control? If not, please discuss the specific proposals that you disagree with.

See section 4.2.

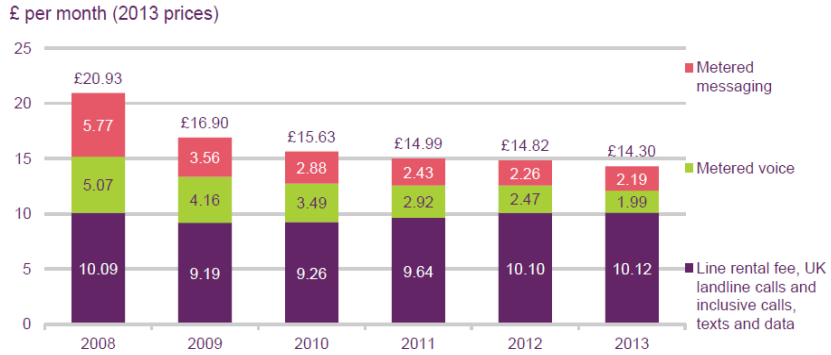
Annex 1: Comments on Ofcom's empirical analysis

This Annex sets out a number of specific comments on Ofcom's empirical analysis of the impact of pure LRIC regulation on prices, usage and subscription, which indicate that the analysis set out in the MCT Consultation may obscure the overall impact which reduced MTRs have had on end users. These comments are in addition to the overriding problem identified in section 5.2 above that Ofcom only compares 2011 data to 2013 data, rather than considering what prices and levels of usage and subscription would have been in 2013 had LRIC+ regulation been retained.

Pricing

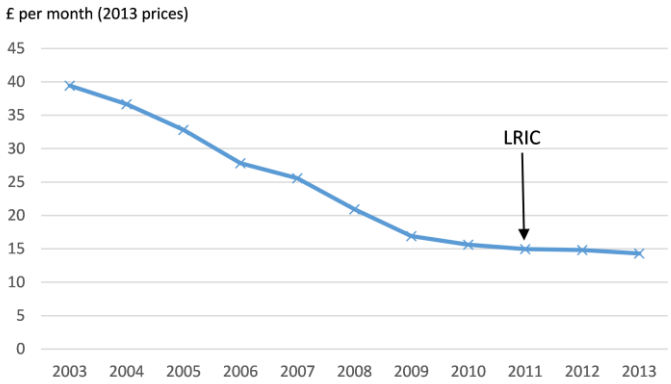
In relation to the impact of pure LRIC regulation on pricing, Ofcom presents a series of the real price of a basket of mobile services from 2008 to 2013 as well as similar data for earlier years in its Communications Markets Reports. This shows significant falls in prices to 2010 and then only marginal price falls since then (and noting that the impact of the transition to pure LRIC is likely to have started to appear in 2011). Ofcom's data shows that real prices for mobile services fell by 25% between 2008 and 2010, but by only 5% between 2011 and 2013.

Figure 1 – Real price of a basket of mobile services 2006-2013



Source: Ofcom, MCT Consultation, Annex 9, Figure A9.1.

Figure 2 - Real price of a basket of mobile services 2003-2013



Source: Ofcom annual Communications Markets Reports (converted to 2013 prices)

Given that the transition to pure LRIC has been associated with the end of the long-term trend of significant annual falls in mobile retail prices, during a period

of ongoing falls in unit costs, this evidence suggests that mobile retail prices may be higher under LRIC than they would have been under LRIC+. This should not be a surprise to Ofcom as it suggested a range for the waterbed effect of 50% to 80% in the 2011 MCT appeals[164].

Higher prices than otherwise can also be expected to have led to lower volumes and hence a loss of mobile retail consumer surplus on the call minutes that do not take place (see further below). In addition, the price impact for certain customers segment is likely to be much higher than the average market impact. For example, pre-pay customers are significant net receivers of calls and hence operators would be more likely to need to increase prices to these customers to make up for the loss in net termination revenues from other mobile operators.

Ofcom also fails to take into account handset subsidies in its pricing analysis, which risks overlooking a significant aspect of the potential impact of LRIC regulation. Ofcom does acknowledge[165] that a higher MTR level may lead to higher handset subsidies – with the implication that adopting LRIC should lead to higher handset prices (i.e. lower subsidies) than would be the case if a higher MTR level were to be allowed. Ofcom also notes that the price of basic handsets has fallen since 2011.[166] However, if handset prices are higher with MTRs set at LRIC compared with a higher level, this will represent a loss in consumer surplus which should be included in an overall assessment of the impact on end-users.

Lower handset subsidies may also lead to slower take-up of smartphones and delay the wider benefits of increased access to mobile broadband. We note that low upfront charges for handsets have been identified as an important factor in the rapid take-up of 4G in South Korea. [167] Slow take-up of smartphones should be of concern to Ofcom given it is required to consider "*the desirability of encouraging the availability and use of high speed data transfer services throughout the United Kingdom.*"[168] For example, the OECD has stated:

> *"Arguably, they [handset subsidies] play a substantial role in users taking up or upgrading their smartphone devices at a faster pace than they would otherwise, and, therefore, in assisting the faster adoption of mobile broadband services…The rapid take-up of smartphones, which are significantly more expensive than feature-phones, could be pointed to as a similar example of a competitive market providing ways to address barriers to credit and, therefore, expanding the social and*

[164] CC Determination, para 5.55. Although as noted in section 5.3 above there is uncertainty as to the extent to which the waterbed effect remains relevant in light of recent academic evidence

[165] Ofcom, MCT Consultation, para 5.17.

[166] Ofcom, MCT Consultation, para 6.89.

[167] http://www.reuters.com/article/2013/02/26/us-mobile-world-korea-4g-idUSBRE91P0R720130226.

[168] Section 3(4)(e) of the Act.

economic benefits that can be associated with the widespread take-up of such devices."[169]

EE also has a number of additional specific comments on Ofcom's comparison of particular tariff offers in 2011 and 2013:

- [✂].
- [✂].
- [✂].
- Ofcom does acknowledge that "*several larger MCPs have increased pre-pay pay as you go prices*"[170], but notes that H3G and some smaller MCPs offer lower pay as you go prices in 2013 than they did in 2011. However, EE questions the comparability of the services offered by these providers, and considers that the sustainability of H3G's prices (which may instead reflect a loss-leader proposition to build H3G's pre-pay base) is also open to question.

Usage

As discussed above, lower general costs for mobile operators would be expected to have allowed for lower prices, flowing through to higher usage and higher subscriber numbers. However, if usage and subscriber numbers have increased by less than they would have under LRIC+, then this should be recognised as a cost of LRIC.

While Ofcom argues that overall mobile voice usage has increased since 2011, this is not consistent with data reported in the Bank of America/Merrill Lynch Global Wireless Matrix Q42013. This shows that minutes of use per subscriber in the UK were growing up to 2010 (including a growth rate of 3.8% in 2010) but fell across 2011 and 2012, and were 6% lower by September 2013 than in 2010.

EE also notes in relation to subscriber numbers that Ofcom's Telecommunications Market Data Tables Q42013 reports that "*The number of active mobile subscribers fell by 350,000 (0.4%) to 83.1 million in the year to Q42013*." While this is only one year of data, it is possible that the impact of the transition to pure LRIC on subscriber numbers could have been hidden until now by the falls in costs (including handset costs), as well as the glide path approach, helping to absorb the impact on prices.

Fixed to mobile prices

Finally, EE considers it significant that Ofcom finds that, at most, only 47% of the reductions in mobile termination charges since 2011 have been passed through into lower fixed-to-mobile retail prices.[171]

EE notes, as above, that Ofcom's assessment of the level of pass-through to fixed-to-mobile prices is flawed as it is based on an incorrect counterfactual (i.e.

[169] OECD, Mobile handset acquisition models, 2013.
[170] Ofcom, MCT Consultation, Annex 9, para A9.31.
[171] Ofcom, MCT Consultation, Annex 9, para A9.52.

Ofcom fails to take into account other potential drivers for falls in fixed-to-mobile calls). Ofcom's analysis therefore does not provide a reliable basis for Ofcom to conclude that "*fixed-line consumers will experience lower prices when MTRs are at LRIC rather than LRIC+ MTRs*"[172] nor that fixed-only customers *"will unambiguously gain*" from pure LRIC regulation of MTRs.[173]

Ofcom's analysis does nevertheless demonstrate that less than half of MTR reductions have been passed through to fixed customers in lower fixed-to-mobile retail prices. Ofcom offers two explanations for this outcome:

> *"First, if each FCP faces a downward sloping demand for calls to mobiles, pass-through would be unlikely to be 100%."*[174]
>
> *"Also, in theory, when MTRs are reduced FCPs may have an incentive to reduce line rental charges (or increase them less than they otherwise would), to attract more customers given the higher profit margins on calls to mobiles when MTRs are reduced."*[175]

However, there is therefore little empirical support for Ofcom's second proposition - Ofcom's Communications Markets Report 2014 shows that the real price of an overall basket of fixed voice services increased by 2% from 2012 to 2013[176], and this is over a time when general unit costs of supplying fixed services have been falling significantly.[177]

This leaves Ofcom's first proposition, on which Ofcom expands by noting that:

> *"For example, with linear (downward sloping) demand and constant marginal costs, pass-through of changes in marginal costs (as the MTR is part of the marginal cost faced by FCPs) would be 50% for a firm with no substitutes for its service (i.e. a monopolist). Other things equal, the more competitive the market, the greater the degree of expected pass-through."*[178]

As such, Ofcom's explanation for the limited pass-through rate of 47% into fixed-to-mobile prices is effectively that deficient competition in the fixed services market may have enabled fixed operators to simply retain over half of the reduction in MTRs on fixed-to-mobile calls as higher profits.

As Ofcom acknowledges, the overall effect of LRIC MTRs is ambiguous as any lower retail prices of fixed line services may be counterbalanced by higher mobile prices.[179] Notably, a 47% pass-through rate into fixed-to-mobile prices is below the 50%-80% range for the waterbed effect in the mobile market considered by Ofcom and the CC in the 2011 MCT appeals.[180] This suggests –

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172 Ofcom, MCT Consultation, Annex 9, para A9.55.
173 Ofcom, MCT Consultation, para 6.94.
174 Ofcom, MCT Consultation, para 6.92.
175 Ofcom, MCT Consultation, para 6.93.
176 Ofcom, Communications Markets Report 2014, Figure 5.62.
177 Ofcom, NMR Statement 2013, Figures A8.1 and A8.2; FAMR Statement 2014, Volume 2, Figure 1.2.
178 Ofcom, MCT Consultation, footnote 215.
179 Ofcom, MCT Consultation, para 6.94.
180 CC Determination, para 5.55.

depending on the actual strength of the waterbed effect in the mobile market (which as explained in section 5.3 above is uncertain in light of recent academic evidence) – that consumers overall may be being made worse off from the shift to pure LRIC, i.e. mobile customers could be paying more as a result of higher mobile retail prices than fixed-to-mobile customers are saving.

EE does not believe that regulation which increases the profits of fixed operators at the expense of mobile operators, whilst having an ambiguous effect on (fixed and mobile) retail prices, is a valid basis on which Ofcom can decide that pure LRIC is a more appropriate cost standard than LRIC+.