



Fixed Narrowband Market
Review and Network Charge
Control
Call for Inputs

Consultation

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Section 1

Introduction

- 1.1 Under the European Framework for Electronic Communications¹, the Office of Communications (Ofcom) is required to carry out periodic reviews of electronic communications markets in the UK. Ofcom has undertaken this exercise on a number of occasions in respect of the markets for fixed narrowband services, the latest covering the period to September 2013. Ofcom is now undertaking a further market review to examine retail and wholesale narrowband fixed telephony services.
- 1.2 Our review aims to finish in time for any new rules, including, if appropriate, any new network charge control (NCC), to take effect when the current network charge control expires in September 2013.
- 1.3 This document, our 'call for inputs' (CFI), seeks stakeholders' views before we start our substantive analysis of competitive conditions in fixed narrowband telephony markets. We are calling for responses and, at the same time, commencing information-gathering using our statutory powers.
- 1.4 All of the views expressed in this document are preliminary or reflect hypotheses to be tested against market evidence. Before any decision about the regulation that will apply after September 2013, we will be setting out detailed proposals in a public consultation. We expect to publish this consultation in January 2013.
- 1.5 We are conscious in conducting this review that we have undertaken significant analysis of the markets on a number of separate occasions. Consequently, we intend to use our previous market analysis as a starting point for this review and to concentrate our subsequent analysis on developments in the markets which have occurred since the 2009 Review, with a focus on areas of particular concern for consumers.
- 1.6 This CFI seeks stakeholders' views about the proposed scope of our review (i.e. the range of services to be reviewed) and the analytical approach that we should adopt for this review in assessing, and responding to, any finding that one or more operators has significant market power (SMP). In particular:
 - i) we want to test with stakeholders some hypotheses concerning how we might define the relevant markets and assess SMP, particularly where the facts may not have changed significantly since the last market review. We will take into account stakeholders' views on whether there has been material change with respect to these issues, and will focus our work on issues, including new and emerging issues, most relevant for consumers;
 - ii) with respect to the existing remedies, we want to know stakeholders' views on their experience with regulated fixed narrowband services, market entry and competition in these markets in the UK; and
 - iii) we seek stakeholders' views on whether and how, in their view, these markets have changed since the last market reviews were completed.

¹ European Commission, *Revised European Framework for Electronic Communications*, 18 December 2009, http://ec.europa.eu/information_society/policy/ecomms/index_en.htm

- 1.7 We seek responses to this CFI by 28 June 2012.² We seek responses in writing, but we are also able to meet with stakeholders to discuss their views.

The findings of the last retail and wholesale market reviews

Fixed Narrowband Retail Service Markets

- 1.8 On 15 September 2009 Ofcom published the *Fixed Narrowband Retail Service Markets Review - Identification of markets and determination of market power*, (the 2009 Retail Review).³ The 2009 Retail Review assessed the state of competition in retail narrowband telephony markets. Where competition was found not to be effective, we set conditions regulating the relevant communications provider found to have SMP in those markets.
- 1.9 The 2009 Retail Review defined the following relevant markets for both Hull and the rest of the UK:
- residential Fixed Narrowband Analogue Access;
 - business Fixed Narrowband Analogue Access;
 - residential Fixed Narrowband Calls;
 - business Fixed Narrowband Calls;
 - ISDN2 Access; and
 - ISDN30 Access.⁴
- 1.10 The 2009 Retail Review concluded that most UK retail fixed narrowband markets, with the exception of the Hull area, were effectively competitive (and, specifically, BT no longer had SMP in the provision of retail fixed narrowband analogue access and retail calls markets in either the residential or business sectors). A further review of the ISDN30 retail market in 2010 concluded that BT no longer held SMP in that market.⁵ Therefore, these markets are no longer regulated. However the review found that BT continued to have SMP in the ISDN2 retail market, and that KCOM still held SMP in all markets in the Hull area.
- 1.11 Table 1.1 shows the markets defined in the last review, the changes to regulations and the remedies currently in place in the retail markets.

² Annex 1 explains how to respond to this consultation.

³ Ofcom, *Fixed Narrowband Retail Services Markets - Identification of markets and determination of market power*, 15 September 2009, http://stakeholders.ofcom.org.uk/consultations/retail_markets/statement/

⁴ As each of these terms is defined in the 2009 Retail Review.

⁵ Ofcom, *Review of the Retail and Wholesale ISDN30 Markets*, 20 August 2010, <http://stakeholders.ofcom.org.uk/consultations/isdn30/?a=0>

Table 1.1 Summary of remedies imposed on the retail markets

Retail Market	Is there SMP?	Remedies / Obligations Imposed
Residential Fixed Narrowband Analogue Access	Y – Hull area No – Rest of UK	BT: regulation removed KCOM: requirement not to unduly discriminate, requirement to notify charges, terms and conditions
Business Fixed Narrowband Analogue Access	Y – Hull area No – rest of UK	BT: regulation removed KCOM: requirement not to unduly discriminate, requirement to notify charges, terms and conditions
Residential Fixed Narrowband Calls	Y – Hull area No – rest of UK	BT: regulation removed KCOM: requirement not to unduly discriminate, requirement to notify charges, terms and conditions
Business Fixed Narrowband Calls	Y – Hull area No – rest of UK	BT: regulation removed KCOM: requirement not to unduly discriminate, requirement to notify charges, terms and conditions
ISDN2 Access	Y – Both Hull area and rest of UK	BT: removal of existing retail remedies, reliance on wholesale remedies to control the cost of market entry ⁶ KCOM: requirement not to unduly discriminate, requirement to notify charges, terms and conditions
ISDN30 Access	Y – Hull area No – rest of UK	BT: regulation removed KCOM: requirement not to unduly discriminate, requirement to notify charges, terms and conditions

Fixed Narrowband Wholesale Service Markets

1.12 On 15 September 2009, Ofcom published the *Review of the Fixed Narrowband Services Wholesale Markets - statement on the markets, market power determinations and remedies including further consultation* (the 2009 Wholesale Review, and referred to together with the 2009 Retail Review as the 2009 Review).⁷ The 2009 Wholesale Review assessed the state of competition in the fixed narrowband wholesale services markets.

⁶ The retail review concluded that BT still had SMP in the supply of ISDN2 lines. However, it was considered that the retail remedies in place at the time (no undue discrimination and price publication) were no longer effective and potentially counterproductive to the development of downstream competition. It was therefore concluded that it had become appropriate to rely solely on the wholesale remedies.

⁷ Ofcom, *Review of the Fixed Narrowband Services Wholesale Markets- statement on the markets, market power determinations and remedies including further consultation*, 15 September 2009, http://stakeholders.ofcom.org.uk/consultations/wnmr_statement_consultation/summary

1.13 We also published a Statement on 5 February 2010 – *Review of the fixed narrowband services wholesale markets – Further statement on wholesale transit markets and remedies in the wholesale call termination market* that concluded our analysis of wholesale transit services and call termination.

1.14 The 2009 Wholesale Review defined the following relevant markets⁸:

- wholesale analogue exchange lines;
- wholesale ISDN2 exchange lines;
- wholesale ISDN30 exchange lines;
- wholesale call origination on a fixed narrowband network;
- wholesale fixed geographic call termination;
- local-tandem conveyance and transit (LTC/LTT);
- inter-tandem conveyance and transit (ITC/ITT); and
- single transit.⁹

1.15 Table 1.2 below shows the markets defined in the 2009 Wholesale Review and the remedies imposed in that review. In Table 1.2, we refer to ‘general remedies’. These are remedies that were imposed in several markets where we determined that a communications provider had SMP. The general remedies are:

- requirement to provide network access on reasonable request;
- requirement not to unduly discriminate;
- basis of charges¹⁰;
- requirement to publish a reference offer;
- requirement to notify charges, terms and conditions;
- requirement to notify technical information;
- cost accounting; and
- accounting separation.

1.16 The 2009 Wholesale Review also considered two additional services, interconnection circuits¹¹, and BT’s ‘Product Management, Policy and Planning’ (PPP).¹² Although

⁸ At the retail level we defined separate business and residential markets. However, we proposed at the wholesale level that there was a single market because the underlying services had converged to the extent that the difference between the basic services supplied to the business and residential markets were minimal.

⁹ As those terms are defined in the 2009 Wholesale Review.

¹⁰ An obligation of cost orientation with floors and ceilings based on the incremental and stand alone costs of the service.

these services were not supplied in a market defined for the purposes of the 2009 Wholesale Review¹³, we concluded that it was necessary to impose obligations on BT and KCOM to provide these services in order to allow remedies aimed at addressing SMP in other markets to be effective.

¹¹ Interconnection Circuits refers to In-Span-Interconnect (ISI), Customer Sited Interconnect (CSI), Interconnect Extension Circuits (IEC) and Intra Building Circuits (IBC).

¹² PPP includes administration overheads, marketing activities directly related to the regulated service, customer service management for these services and billing and finance activities.

¹³ In the 2009 Wholesale Review we referred to interconnection services and PPP as technical areas.

Table 1.2 Summary of remedies imposed on the wholesale markets

Wholesale Market	Is there SMP?	Remedies / Obligations Imposed
Wholesale analogue exchange lines	Y	BT: General remedies, requests for new network access, transparency as to quality of service, obligation to provide wholesale line rental (WLR), charge control KCOM: General remedies
Wholesale ISDN2 exchange lines	Y	BT: General remedies, requests for new network access, transparency as to quality of service, obligation to provide WLR KCOM: General remedies
Wholesale ISDN30 exchange lines	Y	BT: General remedies (excl. basis of charges), transparency as to quality of service, obligation to provide WLR, charge control KCOM: General remedies (excl. basis of charges, cost accounting, and accounting separation)
Wholesale call origination on a fixed narrowband network	Y	BT: General remedies, requests for new network access, obligation to provide carrier pre-selection (CPS), obligation to provide indirect access (IA), number translation services (NTS) call origination, retail uplift and bad debt surcharge, charge control KCOM: General remedies, obligation to provide CPS, obligation to provide IA
Wholesale fixed geographic call termination	Y	BT: General remedies (excl. requirement to notify technical information, cost accounting and accounting separation), charge control KCOM: General remedies (excl. requirement to notify technical information, cost accounting and accounting separation) All other communication providers (CPs) that provide call termination: requirement to provide call termination on fair and reasonable terms, requirement to notify charges, terms and conditions ¹⁴
Local-tandem conveyance and transit	N	BT: General remedies (excl. cost accounting) continued for twelve months after review before being lifted
Wholesale transit services – ITC/ITT	N	n/a
Wholesale transit services – ST	Y (BT only)	BT: General remedies (excl. basis of charges, and cost accounting)
Services Related to the Wholesale Markets		
Interconnection circuits		BT: General remedies, requests for new network access, transparency as to quality of service, charge control. KCOM: General remedies
PPP		BT: Charge control KCOM: n/a

¹⁴ The requirement to notify charges was added following further review published as Ofcom, *Review of the Fixed Narrowband Services Wholesale Markets-further statement on the wholesale transit markets and remedies in the wholesale call termination market*, 5th February 2010, http://stakeholders.ofcom.org.uk/binaries/consultations/wnmr_statement_consultation/statement/state ment.pdf

Section 2

Scope of the market review

Policy objectives

- 2.1 Ofcom's overarching policy objective in relation to electronic communications markets comes from our duties as set out in section 3 of the Communications Act (the Act). In particular, under section 3(1)(a) and (b) of the Act, Ofcom's principal duties are:
- to further the interests of citizens in relation to communications matters; and
 - to further the interests of consumers in relevant markets, where appropriate by promoting competition.
- 2.2 In performing our duties in this review, we propose to assess the state of competition in retail and wholesale markets. These markets are closely connected, and the state of the retail markets has a direct influence on competition 'upstream'. This is an effective way to ensure we further citizens' and consumers' interests in narrowband fixed telephony services.
- 2.3 In addition, we will seek to achieve our objectives by considering all options available to us, including no regulation, to ensure that, in accordance with section 6(1) of the Act, regulation does not involve: the imposition of burdens which are unnecessary; or the maintenance of burdens which have become unnecessary.

Scope of this review

- 2.4 The scope of the 2009 Review included:
- access services (e.g. wholesale analogue exchange lines, wholesale ISDN2 lines and wholesale ISDN30 lines);
 - call origination, termination and transit (e.g. LTC/LTT, ITC/ITT and Single Transit); and
 - related services required to support our regulation in SMP markets (e.g. Interconnection and PPP).
- 2.5 We propose that the focus of this review will be narrower: we intend to focus on the wholesale (and to the extent necessary, retail) calls markets and services related to these markets¹⁵, and do not intend to review the markets for narrowband access services, for the reasons set out below.

¹⁵ e.g. Interconnection Circuits and PPP.

Wholesale analogue exchange lines and wholesale ISDN30 exchange lines

- 2.6 As a result of our reviews of the markets for wholesale local access (WLA)¹⁶ and wholesale fixed analogue exchanges lines (WFAEL)¹⁷, in 2010, we determined that BT had SMP in certain markets for those services. In the WLA market we set a condition requiring BT to provide 'local loop unbundling' (LLU), whilst in the WFAEL we required BT to provide wholesale line rental (WLR). In addition, we set charge controls to address BT's SMP in those markets. Similarly, we have recently concluded a review of the wholesale ISDN30 market and imposed a charge control on BT. All of these charge controls expire in March 2014.
- 2.7 As a result of the above reviews we also determined that KCOM had SMP in certain markets for those services. In the WLA and WFAEL markets we set a number of general conditions.
- 2.8 Having recently reviewed the WLA, WFAEL and ISDN30 markets, and set charge controls until March 2014, we do not propose to review these markets at this time. We will commence a review of these access markets late in 2012 with the aim of concluding before the current WLR, LLU and ISDN30 charge controls expire.

Wholesale ISDN2

- 2.9 In our 2009 Review we considered the wholesale ISDN2 exchange lines market and concluded that BT had SMP in this market in the UK (excluding Hull) and that KCOM had SMP in Hull. We did not impose a charge control on BT (or KCOM) and we have not considered this market since 2009.
- 2.10 It is our view that it is more appropriate to review the wholesale ISDN2 exchange lines market at the same time as the other exchange lines markets and will proceed at the appropriate time.

Proposed approach for this review

- 2.11 Our aim for this review is to consider the state of competition in the supply of fixed narrowband retail services (principally fixed calls) and fixed narrowband wholesale services used by retailers to enable retail supply, including services purchased by communications providers for the purposes of interconnection.
- 2.12 There are four stages that we will follow in this market review:
- product market definition;
 - geographic market definition;
 - assessment of SMP; and
 - where SMP is found, determining appropriate remedies.

¹⁶ Ofcom, *Review of the Wholesale Local Access Market - statement on market definition, market power determinations and remedies*, 7 October 2010, http://stakeholders.ofcom.org.uk/binaries/consultations/wla/statement/WLA_statement.pdf

¹⁷ Ofcom, *Review of the Wholesale Fixed Analogue Exchange Lines Markets- statement on market definition, market power determinations and remedies*, 20 December 2010, <http://stakeholders.ofcom.org.uk/consultations/review-wholesale-fixed-exchange/statement>

- 2.13 As indicated above, we have reviewed fixed narrowband services a number of times and gathered a lot of information in the process. In this review, we therefore intend to build on the analysis done in previous market reviews rather than starting from scratch. We are therefore seeking stakeholders' views, together with evidence, on whether the analysis contained in the 2009 Review remains appropriate. This will inform the extent to which significant further analysis is needed in light of market developments.

Identification of main stakeholder concerns

- 2.14 We are particularly interested to understand where stakeholders believe that the market is not working well and what improvements could be made to address this.

Question 1: What are the main issues we should examine in this market review?

Question 2: Are there particular problems or issues in these markets that this review should address? Where you identify a problem, please explain why you believe regulation to be an appropriate response?

Section 3

Retail Markets

Introduction

- 3.1 This section covers the retail markets for fixed voice telephony services and considers the extent to which market developments may have changed our findings since the 2009 Review.

State of competition

Ofcom's position in the last market review

- 3.2 In our 2009 Retail Review, we defined a number of retail narrowband markets and concluded that many of these, particularly those in the UK (excluding the Hull area), were competitive.¹⁸ In those markets found to be competitive, no regulation can be imposed.
- 3.3 We found that different competitive conditions existed in the Hull area compared to the rest of the UK. We found that KCOM had SMP in the business and consumer retail fixed call markets; we found no SMP in those markets for the rest of the UK. We therefore applied specific retail and wholesale SMP remedies to KCOM in the Hull area only.
- 3.4 In reaching our conclusion that the relevant markets outside of the Hull area were competitive, we found that SMP regulation at the wholesale level was supporting competition at the retail level. Wholesale remedies, such as the requirements on Openreach to provide WLR and LLU services, had led to the development of services which enabled competitors to replicate the services offered by BT. The ability to offer retail narrowband services using wholesale services had significantly reduced barriers to entry and growth, encouraging new operators to enter the market and expand. As a result of this entry and expansion we found that BT's market share had fallen substantially, which suggested that consumers were willing and able to switch between retail narrowband service providers.
- 3.5 Our analysis of prices suggested that consumers were paying less for calls, with the cost of calls in the UK being similar to, or lower than, the cost in other OECD countries. We also noted that since the retail price control had been lifted in 2006, the average residential phone bill had increased by less than inflation.
- 3.6 We also considered whether Northern Ireland constituted a separate geographic market. However, we concluded that it did not constitute a separate geographic market for the purposes of the review as BT is still subject to the same regulatory obligations in Northern Ireland as in the rest of the UK outside Hull, and wholesale solutions, including LLU, are provided by BT Ireland's wholesale division.

¹⁸ See Table 1.1 for details on findings in individual markets.

Developments since the 2009 Retail Review

The United Kingdom (excluding the Hull area)

- 3.7 BT's market share of voice minutes has continued to decline, from 42.2% in 2009 to 37.5% in 2011 in the residential market and from 35.1% in 2009 to 32.2% in 2011 in the business market.¹⁹ The use of full LLU by BT's competitors has grown, with the number of fully unbundled lines increasing from 2.7 million in Q4 2009 to 5.2 million in Q4 2011 and the estimated market share of all analogue lines (i.e. both residential and business lines) provided using LLU increasing from 8.7% in Q4 2009 to 17.7% in Q4 2011.²⁰
- 3.8 The shift from shared to full LLU is significant. Both forms of LLU allow the CP to locate their own equipment in BT's local exchanges to connect to BT's local copper access network. However, shared LLU only allows the CP to provide ADSL broadband services, with narrowband voice services still being provided over BT's narrowband network. By contrast, full LLU provides full control of services supplied over the copper access network to the CP, so that they are able to provide both narrowband and broadband services without relying on BT's narrowband network services. This is likely to lead to more intense retail competition. Figure 3.1 shows how the number of full LLU lines has grown (and we give more weight to this measure than the measure of all LLU lines (including shared lines) when considering the impact of LLU on competition in narrowband retail markets).

Figure 3.1: Number of LLU lines

Millions of lines

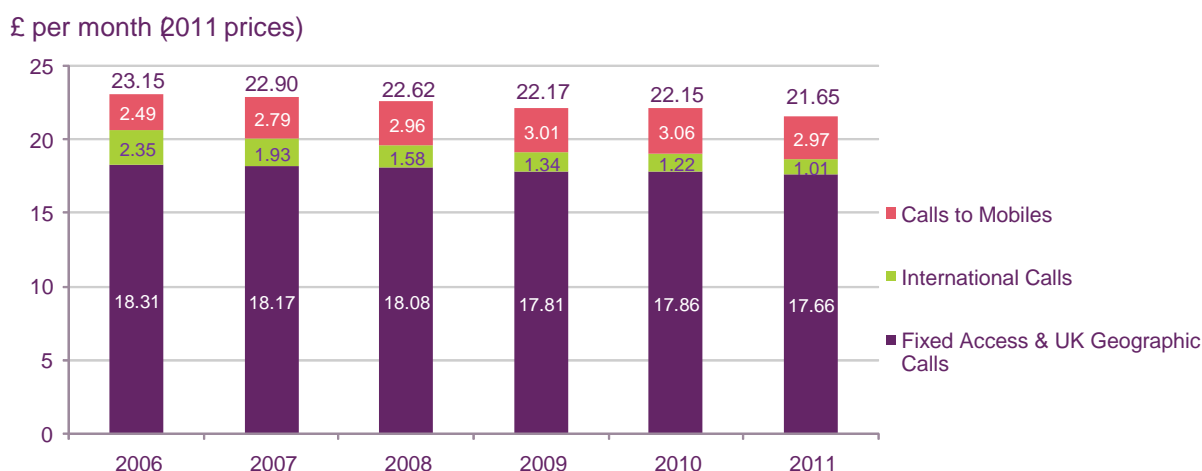


Source: BT

- 3.9 Figure 3.2 shows that average prices paid by consumers have declined slightly since the 2009 Review, with the cost of a basket of residential fixed voice services falling by 0.2% in real terms from 2010 to 2011 (continuing the trend since 2006). Since the 2009 Review, take-up of tariffs with inclusive minutes has grown.

¹⁹ Ofcom quarterly data. Based on voice calls excluding NTS voice calls.

²⁰ Ofcom quarterly data.

Figure 3.2: Real cost of a basket of residential fixed voice services

Source: Ofcom quarterly data

Note: Includes estimates where Ofcom does not receive data from operators; excludes non-geographic voice calls; includes VAT. Average cost of basket derived by calculating the average cost per minute for access and calls in a year and then defining the basket as the average number of minutes used in 2011. Average cost per minute is calculated from data provided by CPs on fixed voice call volumes and revenues, which includes any bundled revenues that CPs allocate to voice services.

The Hull Area

3.10 We are not currently aware of any developments in relation to the retail markets in the Hull area which would have a significant impact on the analysis contained in the 2009 Review. In particular, we are not aware of any significant take up of wholesale products which has had a material impact on the state of retail competition. However, we welcome comment from stakeholders on developments to inform our analysis of the relevant markets.

Northern Ireland

3.11 The 2009 Review concluded that Northern Ireland should not be considered to be a separate market on the basis that wholesale obligations imposed on BT would apply in Northern Ireland as well as in the rest of the UK excluding Hull, even though they would be provided by BT Ireland rather than by Openreach or BT Wholesale. We are not currently aware of any developments in the market which would affect the conclusions in the 2009 Review but would welcome stakeholder comments to further inform this view.

Considerations for this review

3.12 We do not currently expect that markets which were found to be competitive in 2009 are likely to have become less competitive since then. Therefore, we do not envisage the need for a revision of the market definition and SMP analysis set out in the 2009 Review in the UK excluding Hull. We expect our main focus in considering competition in retail services will be to inform our market definition and SMP analysis at the wholesale level. In addition, we will consider the extent to which our assessment of competition in Northern Ireland remains accurate in light of developments in the markets.

- 3.13 In the Hull area, we will need to consider whether regulation remains appropriate by considering the extent to which market developments may have affected the SMP which KCOM was found to hold in the retail markets.

Question 3: What are your views on the current state of competition in the market for retail narrowband services in the United Kingdom (excluding the Hull area)? How do you think this might change over the next 3 to 4 years?

Question 4: What are your views on the state of retail competition in the market for retail narrowband services in Northern Ireland?

Question 5: What are your views on the state of retail competition in the Hull area?

Section 4

Wholesale markets

Introduction

4.1 In this section we discuss the wholesale markets. We have started our consideration on the basis of the markets defined in the 2009 Review and in this document focus on the following points:

- In relation to wholesale call origination, we seek views on:
 - the effect of wholesale call origination prices at the retail level;
 - whether mobile and/or Voice over Internet Protocol (VoIP) services at the retail level (see paragraph 4.11 for our definition of VoIP services) should be considered in the same relevant market as wholesale call origination services on narrowband networks;
 - similarly, whether call origination over LLU networks should be included in the same market as wholesale call origination;
 - geographic market considerations; and
 - the extent to which developments in mobile, VoIP and/or LLU services have led to a material change in overall competitive constraints on wholesale call origination and therefore to any SMP finding.
- In relation to wholesale call termination, we seek views on whether we should adopt a market definition that refers to the number range allocated to a CP, in line with our approach in mobile call termination (MCT) and whether our previous finding that each provider of fixed geographic termination has SMP is still likely to be valid;
- for both origination and termination, whether we should reconsider our market definitions to take account of next generation networks (NGNs), particularly the effect that NGNs may have on the number of points at which interconnection is available; and
- the approach we should take in LTC/LTT and Single Transit.

Market definition in wholesale call origination

Effect of wholesale call origination prices at the retail level

Ofcom's position in the 2009 Review

4.2 In our 2009 Review we recognised the need to take into account both direct and indirect constraints when considering market definition in the supply of wholesale services. In the context of call origination, direct constraints refer to the possibility for CPs to switch from BT's call origination to an alternative provider, either through self-supply or a third-party CP. Indirect constraints arise from the fact that an increase in wholesale call origination costs could lead to higher retail prices and in turn to a

significant reduction in retail demand for calls which originate on BT's network. Indirect constraints may be strong enough to include two products in the same relevant market even if there is no realistic prospect of direct substitution. To include indirect constraints in our assessment of market definition, we first need to make assumptions about how changes in wholesale charges affect retail prices, if at all.

- 4.3 In the 2009 Review, we compared the regulated price of wholesale call origination with the price of a retail call and found that call origination accounted for at most 30% of the price of a call. This implied a 5-10% increase in wholesale call origination would lead to at most an increase of 1.5-3% at the retail level.
- 4.4 We also considered that the retail price increase might be even lower than the 1.5-3% range, due to less than full pass-through of wholesale call origination costs into retail call prices. One reason for this would be that some operators might not want to change their prices, even if their costs rose modestly, for example, because of marketing costs to communicate the price change. Operators may also be concerned about losing market share in bundled and/or associated services if they increased the price of the bundle to reflect the increased cost of call origination.

Developments since the last market review

- 4.5 In September 2009, we set BT's NCC, (the 2009 NCC Statement).²¹ The 2009 NCC Statement applied a charge control of RPI+2.5% p.a. on call origination, from 1 October 2009 until 30 September 2013. In this review we want to understand how, if at all, any changes in wholesale call origination prices have affected retail call prices and/or other aspects of the retail offering (e.g. access charges). We are also interested in how, if at all, the response differs between residential and business packages. For example, do CPs providing services to business users alter the composition of bundles to reflect higher costs of fixed voice call origination?
- 4.6 Our aim is to establish how retail prices and bundle composition might change following a 5-10% increase in the price of wholesale origination, and thereby the likely strength of any indirect constraints.

Considerations for this review

- 4.7 This market review will consider indirect constraints from mobile, VoIP and LLU when assessing market definition in wholesale call origination. To do so, we will need to consider to what extent changes in wholesale call origination costs affect retail call prices and/or other aspects of the retail offering.

Question 6: To what extent have changes in wholesale charges (such as for wholesale call origination and termination) affected the pricing of retail services, including line rental charges, number of bundled minutes, bundle composition and call prices? Please distinguish between residential and business packages where appropriate.

²¹ Ofcom, *Review Of BT's Network Charge Controls - Statement*, 15 September 2009, http://stakeholders.ofcom.org.uk/binaries/consultations/review_bt_ncc/statement/nccstatement.pdf

Impact of mobile and VoIP services on wholesale call origination markets

Ofcom's position in the 2009 Review

- 4.8 In the 2009 Review, we found that mobile services did not provide a direct constraint on wholesale fixed call origination. We considered that the potential for direct substitution could be affected by technological developments, and in particular through mobile network operators investing in femtocell technology, which relies on fixed network backhaul and could therefore also be used to support fixed line services.
- 4.9 The indirect constraint from fixed to mobile substitution was also found to be too weak to include mobile services in the same relevant market as wholesale call origination. In the 2009 Retail Review, we found evidence of increasing use of mobile services and falling use of fixed services. However, we did not consider this fixed-mobile substitution to be sufficient that it was appropriate to include mobile calls in the same market as retail fixed calls. In the residential sector, there appeared to be limited fixed-to-mobile substitution despite a significant reduction in the price of mobile calls relative to fixed calls in previous years. In relation to business calls, our survey evidence and trends in relative fixed-mobile prices suggested that other factors, most notably e-mail, were the main cause of observed reductions in fixed line calls.
- 4.10 This market definition implied that a hypothetical monopolist of fixed calls could profitably increase prices by 5-10% without inducing sufficient substitution to mobile. By extension, we concluded that a price increase of 5-10% at the wholesale level, which would result in at most a 1.5-3% increase at the retail level, would also be likely to be profitable on the basis that there would not be sufficient switching at the retail level to sufficiently reduce wholesale revenues.
- 4.11 In the 2009 Review we considered VoIP services. We split these services into managed and un-managed services, as follows:
- Managed Voice over IP (managed VoIP): this includes services where the internet service provider (ISP) that provides a customer's broadband service also provides a voice service over the broadband connection. The ISP controls the provision of this voice service and can therefore make decisions to manage the quality of service for end-to-end calls. Calls to the narrowband public switched telephony network (PSTN) network are likely to be supported. Prices may be similar to prices for calls made over the narrowband network.²² In addition, managed VoIP also includes services where a business is provided with a single access connection to support all its traffic (voice, private data traffic and internet access). The provider of this integrated communications service will provide a managed voice service: the traffic will not be passed via the public Internet. This is sometimes referred to as IP Voice and/or Session Initiation Protocol (SIP) trunking.
 - Un-managed Voice over IP (un-managed VoIP): this includes services where a separate voice service provider (such as Skype) provides the service "over-the-top" of a broadband connection. The provider of the broadband connection (whether this is a residential ISP or the provider of integrated business communications) routes the traffic to the Internet. There is no guarantee the

²² In the 2009 Review we called these services Managed Voice over Broadband (managed VoB).

broadband access provider will prioritise this traffic over other types of Internet traffic. Therefore, quality of service is likely to be more variable than a managed service. Calling between customers subscribing to the service is likely to be free. The service may allow the subscriber to make and receive calls to and from the PSTN. Calling to/from the PSTN is likely to be charged for, either on a call by call basis or as part of an inclusive subscription/bundle.²³

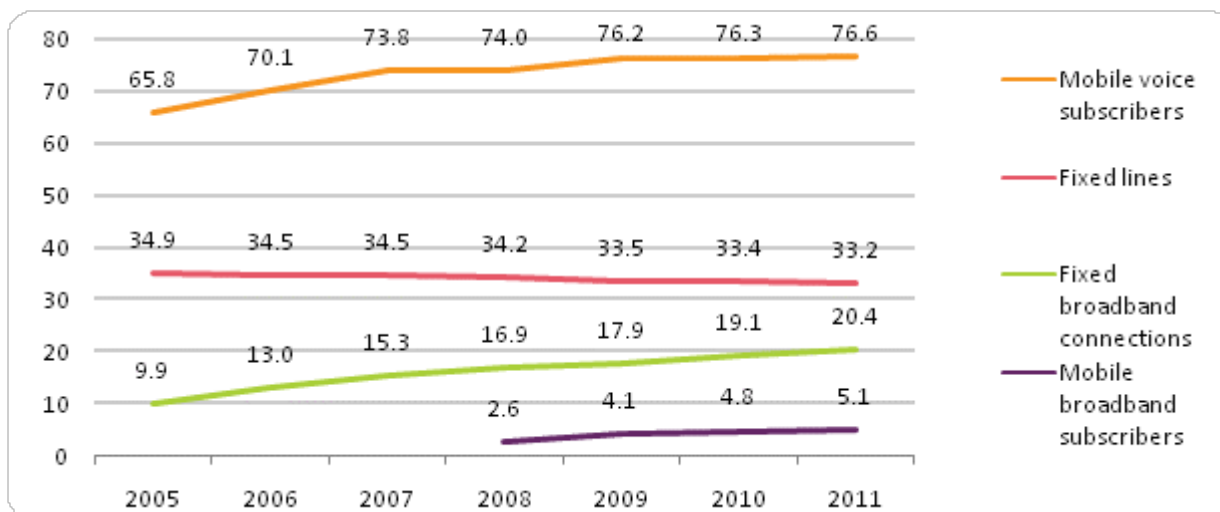
- 4.12 At the retail level, we found that managed VoIP was in the same market as fixed line calls because these services share the characteristics valued by fixed line customers, namely high quality and reliability. Un-managed VoIP was not within that market, largely due to quality differences, although we noted that it may still provide some constraint on fixed line call prices. The degree of constraint was limited because at the time of that review, very few customers used these services.
- 4.13 The possibility of substitution to managed VoIP was considered only briefly in the context of wholesale call origination market definition given that very few consumers used those services at the time. We said we did not expect managed VoIP to provide an effective indirect constraint because we considered it was unlikely that a small but significant non transitory increase in price (SSNIP) would cause sufficient substitution to managed VoIP to make the SSNIP unprofitable. We did not consider the possibility of substitution to unmanaged VoIP in the context of wholesale call origination given our conclusion that it was not within the same market at the retail level.

Developments since the 2009 Review

- 4.14 Figure 4.1 below shows that the number of fixed line connections fell from 33.5 million to 33.2 million between 2009 and 2011, while the number of mobile voice subscribers (which excludes mobile broadband connections) increased from 76.2 million to 76.6 million over the same period.

²³ In the 2009 Review we called these services Un-managed Voice over Broadband (un-managed VoB).

Figure 4.1: Total Telecoms Connections



Source: Ofcom / operators

Note: Includes estimates where Ofcom does not receive data from operators; broadband excludes corporate connections; fixed-line connections includes PSTN lines and ISDN channels along with lines reported as 'other' which were previously excluded from the analysis

4.15 Figure 4.2 below shows that fixed originated voice call minutes have continued to decline, falling from 131.9 billion minutes in 2009 to 115.9 billion in 2011. Over the same period the total volume of fixed and mobile voice calls fell from 252.4 billion minutes to 239.4 billion minutes. Mobile originated calls accounted for 52% of all call volumes in 2011, the first year in which mobile calls have accounted for a greater percentage of call volumes than fixed calls.

Figure 4.2: Fixed and Mobile Voice Call Volumes

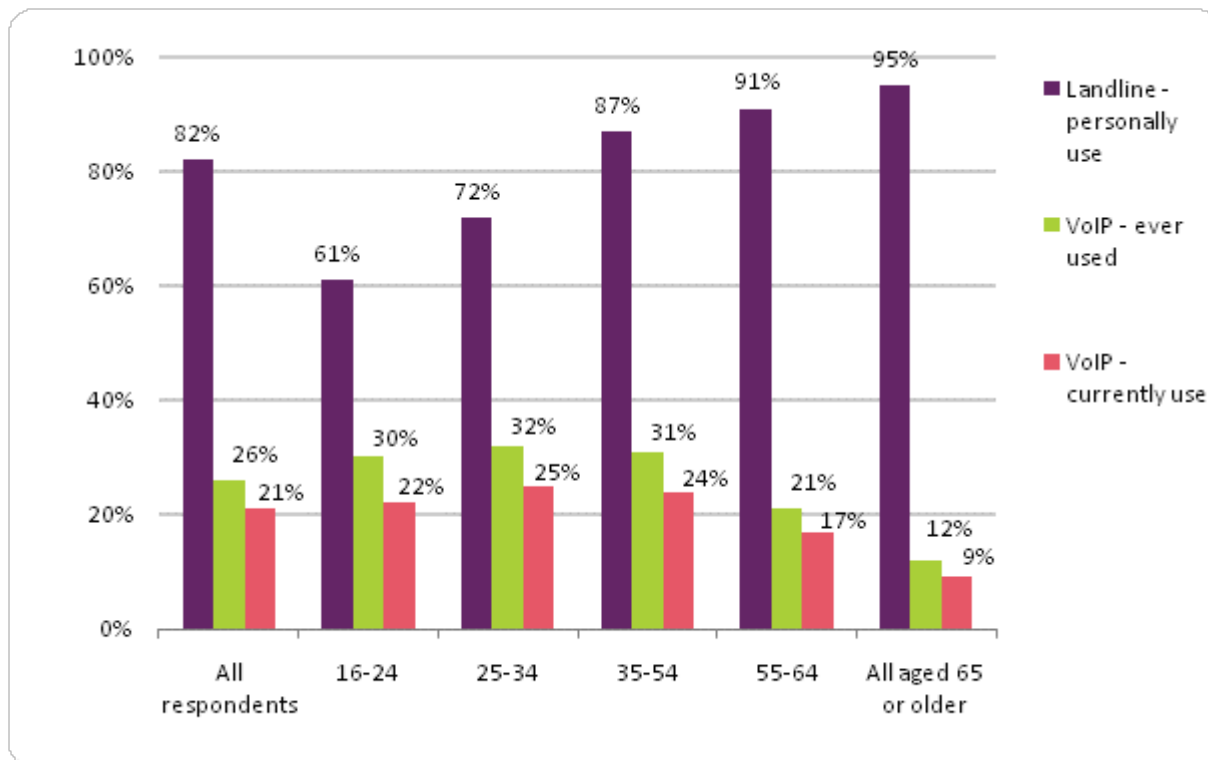


Source: Ofcom / operators

Note: Includes estimates where Ofcom does not receive data from operators

4.16 Figure 4.3 below shows usage of VoIP across all respondents and by age group, and shows that in Q1 2012 more than one in five adults (21%) said that they currently made voice calls over a broadband connection. This suggests a growing potential for substitution from fixed voice calls to voice over broadband calls.

Figure 4.3: Uses of Fixed Voice Communication Services in the Home



Source: Ofcom research Q1 2012

Base = All respondents: 3474; 16-24s = 460; 25-34s = 540; 35-54s = 1204; 55-64 = 535; 65+ = 735

Considerations for this review

4.17 We will consider the possibility for both direct and indirect substitution to mobile and VoIP when conducting our market definition analysis for wholesale call origination. Whilst we recognise these services may have developed further, this does not mean the constraint has increased to such an extent we should now consider them to be in the same market as wholesale call origination on narrowband networks due to the effects we set out in the 2009 Review.

Question 7: Do you consider there has been a sufficient increase in the competitive constraint from mobile and/or VoIP on wholesale call origination since the last market review such that they should now be included in the same relevant market? Please distinguish between the direct and indirect constraints from each where appropriate.

Impact of LLU on wholesale fixed call origination markets

Ofcom's position in the 2009 Review

4.18 In the 2009 Wholesale Review we considered both direct and indirect constraints from alternate networks, in particular LLU. With respect to direct constraints, we

found that retail providers could switch their demand in areas where alternative fixed networks are available, which might be sufficient to defeat a SSNIP on wholesale call origination in these areas. When looking at market definition for wholesale call origination, we said that LLU would only impose a weak constraint overall due to the level of LLU deployment. We also noted that there was no narrowband-only LLU service, which restricted the potential for direct substitution by CPs serving narrowband-only customers or customers purchasing narrowband and broadband separately.

- 4.19 With respect to indirect constraints, it was not clear how much any wholesale price increase would be passed on to consumers and therefore how much switching would occur. As noted in paragraph 4.3, wholesale call origination accounted for at most 30% of the price of a retail call and there may be reasons for CPs to absorb at least some of any increase or for pass-through to be made elsewhere, for example within the price of a bundle with line rental and/or broadband. In addition, all CPs relied on the ability to purchase wholesale call origination nationally at competitive prices because their ability to self-supply was limited to the areas where they had their own networks. As a result, an increase in the price of wholesale call origination would affect the retail price of all CPs to some extent, limiting the degree of change in relative retail prices of LLU and non-LLU operators which would in turn be likely to limit consumer switching.
- 4.20 We did not conclude on whether call origination made over LLU should be included in the market, because we considered that we would not come to a different conclusion on SMP if LLU was included or excluded from the market, given the low volume of lines provided by full LLU at the time.

Developments since the 2009 Review

- 4.21 LLU coverage has increased since the 2009 Review. In addition, there has been movement from shared LLU to full LLU, as discussed in Section 3 above. Because of the increased use of full LLU, and the extended LLU footprint, there is likely to have been an increase in the competitive constraint from LLU. Also, fewer fixed line customers are now purchasing narrowband-only services²⁴, which indicate a greater potential for both direct and indirect substitution to LLU.
- 4.22 However, as in the 2009 Wholesale Review, wholesale call origination continues to comprise a small proportion of the combined costs of monthly wholesale line rental and call origination charges (and an even smaller share of double-play and triple-play bundles increasingly purchased by consumers). Therefore, even given these developments in LLU, the direct and indirect constraints provided by LLU may not have increased significantly.

Considerations for this review

- 4.23 We propose to consider the constraint from LLU on wholesale call origination using a similar approach to that taken in the last market review.

Question 8: As the deployment of LLU has increased, should services provided over LLU be considered in the same relevant market as wholesale fixed call origination services provided by BT?

²⁴ See figure 4.1 showing increase in take-up of broadband by consumers.

Geographic dimension of wholesale fixed call origination markets

Ofcom's position in the 2009 Review

- 4.24 The 2009 Review found there could be some variations in the strength of local competition due to the presence of LLU and cable in some areas but not others. However, we concluded these local variations in competition would be limited by a number of factors, with the result there was a single market for wholesale call origination in the UK outside of Hull. The factors limiting local competition included the national pricing policies operated by all CPs at the time and the reliance of CPs on BT in areas where there was no LLU. Even in areas where LLU was present, we said that CPs may still require BT's wholesale exchange lines (and therefore BT's wholesale call origination) because there was no narrowband-only LLU service available. As a result, LLU would not be suitable for a retail CP providing a narrowband-only service to its customers.

Developments since the last market review

- 4.25 As noted in relation to the constraint from LLU on wholesale call origination, the increase in full LLU and broadband uptake that has occurred since the 2009 Review is likely to have increased the potential for direct switching in the areas where LLU is present. However, there does not appear to have been any significant change in the importance of wholesale origination costs in relation to the combined cost of an exchange line and call origination bundle, which appears to remain very low.

Considerations for this review

- 4.26 In this review, we will assess whether the increase in full LLU lines and broadband take-up has affected the degree of variation in local competition for fixed call origination.

Question 9: To what extent do you think that competitive conditions vary materially in different areas, or is fixed call origination subject to broadly similar competitive conditions across the country?

SMP analysis in wholesale fixed call origination markets

Ofcom's position in the 2009 Review

- 4.27 In the 2009 Review we proposed that BT had SMP in the market for call origination on a fixed network in the UK excluding Hull and KCOM had SMP in the market for call origination on a fixed network in Hull.
- 4.28 In relation to the UK excluding Hull, we concluded that even with the increased availability of LLU, BT still had a substantial market share in the market for call origination when all fixed networks were included and it was also the only supplier that was able to provide a service across the whole market. Based on data provided by CPs, we estimated that BT's market share, where call origination on alternate fixed networks was included, was approximately 73% in 2007. We estimated its share as approximately 78% in 2002-2003, indicating that BT's market share had remained relatively constant. We also found that BT had almost 100% of the third-party wholesale call origination market (C&W was the only other CP that supplied wholesale call origination to third parties and it sold limited volumes compared to BT). Some CPs (e.g. Gamma) did offer call origination services to other CPs but this

was primarily based on reselling call origination purchased from BT. This led us to conclude that BT had SMP in the market for call origination.

- 4.29 We found that KCOM had SMP in wholesale call origination in Hull. This was because there was a lack of alternative networks as neither cable nor LLU were present. Barriers to entry were at least as strong, and possibly stronger, than in the rest of the UK. KCOM had a 100% market share in wholesale residential exchange lines and did not face strong constraints in wholesale business lines, where the only alternative was in the ISDN30 market.

Developments since the last market review

- 4.30 As noted in relation to market definition, there have been developments in mobile, VoIP and LLU services which may have increased the constraint from each potential alternative to wholesale call origination on fixed networks. Whilst the level of constraint in each case may not be individually sufficient to include these alternatives in the same relevant market, their cumulative effect may have implications for our SMP analysis.

Considerations for this review

- 4.31 Following our market definition exercise for wholesale call origination, we will assess whether there is SMP in the market as defined in this review. As with our approach in previous reviews, we will take into consideration the cumulative effect of all competitive constraints, including those found to be outside the relevant market, when conducting our assessment of SMP.

Question 10: To what extent do you think there has been a material change in competitive conditions that would impact our SMP analysis for wholesale call origination on fixed networks?

Fixed call termination

Ofcom's position in the 2009 Review

- 4.32 We found a separate market for wholesale fixed geographic call termination on each individual fixed network.
- 4.33 We noted that the network offering a caller the facility to call a number (an originating network) purchasing call termination services has no alternative than to obtain it from the network of the subscriber being called. This implies that, once a call has been made, the network of the subscriber to whom the call has to be delivered has a monopoly on terminating that call, and hence faces no direct constraint at the wholesale level. We considered the possibility of indirect constraints, which could arise if an increase in call termination rates led to an increase in retail prices that in turn prompted substitution by consumers to potential alternatives such as mobile or VoIP. It was found that neither mobile nor VoIP termination would offer a sufficient constraint to be considered in the same relevant market.
- 4.34 Although managed and un-managed VoIP services were found to cost the same or less than calls to traditional fixed lines, their constraining effect was limited by several factors. The level of broadband penetration in the UK (58% at the time of the 2009 Wholesale Review) meant that a significant proportion of consumers did not have the ability to be provided with a VoIP service and, even for those that did have

broadband, not all broadband providers also offered a VoIP service, so that the availability of managed VoIP services were limited. In addition, even where a consumer was supplied with a VoIP service, we concluded that it was unlikely that the consumer would inform calling parties of the number associated with the VoIP service. With un-managed VoIP services the constraint was found to be weaker still, due to perceived quality issues and the fact the end-user being called would be more likely to have to be connected to the internet to be reached.

- 4.35 We found that each fixed CP had SMP in the market for fixed geographic call termination on its own network. This was because each CP has a 100% share of the market for call termination on its own network and no originating network was found to have sufficient countervailing buyer power to defeat an increase in termination rates above the competitive level.

Developments since the 2009 Review

- 4.36 We recently conducted a review of mobile call termination (the 2011 MCT Statement)²⁵ in which we concluded that a separate market existed for each provider that had been allocated a mobile number range for which it set the mobile termination rate (MTR), and that all providers had SMP in providing call termination to the number ranges which they control.
- 4.37 This market definition differs from that adopted previously for fixed geographic call termination (including in the 2009 Wholesale Review) as it defines a separate market with respect to calls to numbers allocated to the number range holder (with that number range comprising an element in the “individual network” under consideration) rather than for each access network. The reasoning for this approach recognised that not all mobile CPs (MCPs) who offer a wholesale voice call termination service manage a radio access network.
- 4.38 In addition to the 2011 MCT Statement, we also set out our guidance on the interpretation of the fair and reasonable obligation imposed on CPs other than BT that provide fixed geographic call termination (the 2011 fixed termination rate (FTR) Guidance).²⁶ A summary of that guidance is set out in this CFI in the discussion of symmetric FTRs in section 6.

Considerations for this review

- 4.39 In this review, we will consider the appropriate market definition for fixed geographic call termination. It may be appropriate to adopt a similar approach for this assessment to that taken in the 2011 MCT Statement, in particular by recognising that an important element of the ‘individual network’ with respect to which call termination is being considered is the number range allocated to the terminating network provider. This is because a fixed CP may have been allocated number ranges but does not operate its own access network, instead hosting its numbers on another CP’s access network, but still offering fixed geographic call termination.

²⁵ Ofcom, *Wholesale mobile voice call termination- statement*, 15 March 2011, <http://stakeholders.ofcom.org.uk/consultations/mtr/statement>

²⁶ Ofcom, *Fair and reasonable charges for fixed geographic call termination*, 27 April 2011, <http://stakeholders.ofcom.org.uk/binaries/consultations/778516/statement/fair-reasonable-statement.pdf>

- 4.40 We will also conduct a market power assessment of fixed voice call termination. We will consider whether there have been any changes in competitive conditions in the markets for fixed geographic call termination that might change our finding of SMP in each of the defined markets. We are not currently aware of any such changes and our preliminary view is that all operators continue to hold a 100% market share of the market for fixed call termination as defined in the 2009 Wholesale Review.

Question 11: Do you consider that individual CP's number ranges are a relevant factor in defining the relevant market in fixed call termination?

Question 12: Do you consider that there have been any changes in the markets for fixed call termination that would be relevant in our assessment of SMP in these markets?

NGNs

Ofcom's position in the 2009 Review

- 4.41 In the 2009 Wholesale Review, we discussed BT's proposed deployment of its NGN, which BT called its '21st Century Network' (21CN). In 21CN, narrowband traffic would be carried over IP (i.e. as VoIP). As some other CPs had already deployed, or were planning to deploy, their own NGNs, interconnection via IP would be the most efficient mechanism for connecting the two NGNs. We set out that BT had discussed IP interconnection with industry.
- 4.42 In the event, BT did not build the 21CN. It announced that it expected to maintain service on its current Time Division Multiplex (TDM) voice network for a considerable time so that existing TDM interconnection to BT was likely to remain in place for longer than previously expected.
- 4.43 Nonetheless, to take account of the presence of NGNs, we updated our definition of the call origination and call termination markets to be relevant for both TDM networks and NGNs. We defined call origination as follows:
- The conveyance of all signals (including relevant control signals) originating on a customer's exchange line to the first point in the network where those signals can be accessed by another communications provider.
- 4.44 We took a similar approach for call termination to focus on the delivery of traffic from the point in the network nearest to the point of termination where another CP could hand over the traffic to the customer's exchange line to, irrespective of the physical network over which the call was delivered.

Developments since the 2009 Review

- 4.45 In our 2010 NGN statement²⁷, we indicated that we would consider the arrangements for setting the termination rates of CPs other than BT, given that the Reciprocity Agreement, by which these rates had previously been determined, had expired and

²⁷ Ofcom, *Next Generation Networks*, 28 January 2010, http://stakeholders.ofcom.org.uk/binaries/consultations/ngndevelopments/statement/ngn_statement.pdf

industry had been unable to finalise a new agreement. One area raised by stakeholders related to the interconnection of TDM networks to NGNs.

- 4.46 In the 2011 FTR Guidance we set out our guidance on how we would interpret the “fair and reasonable” obligation imposed on CPs other than BT. We said that whilst we considered that NGNs were likely to be the most efficient ultimate outcome, we expected an extended period of co-existence and that we did not consider it appropriate for us to seek to actively encourage migration through our guidance on FTRs – only that we provide an environment for efficient migration. We also said that within the 2011 FTR Guidance we were not considering whether NGNs were the modern equivalent asset (MEA) for setting a charge control on BT for call termination, and that the appropriate place to consider whether NGNs were the more efficient technology was within the market review framework.

Considerations for this review

- 4.47 During the period considered in this review (October 2013 to September 2016) we expect the continued co-existence of TDM networks and NGNs. Therefore, as we indicated in the 2011 FTR Guidance, we propose to consider whether NGNs should be considered as the efficient technology for the purposes of ex-ante regulation.
- 4.48 In relation to the market definition and SMP assessment of call origination and call termination, we propose to consider whether the current market definitions remain appropriate or whether we should revisit the scope of these markets to take account of NGNs. In particular, this would mean considering whether we should take account of the different interconnection architectures of TDM networks and NGNs within the market definition. This is because in NGNs the efficient network topology has fewer points of interconnection than an equivalent TDM network so that call origination and call termination services would be provided at fewer locations.

Question 13: Does the deployment of NGNs by a number of CPs change the way we might define the markets of wholesale call origination and termination? For example, should the definition of these markets take into account the reduced number of points of interconnection that would exist in an NGN?

Single Transit

Ofcom’s position in the 2009 Review

- 4.49 In the 2009 Review we defined Single Transit and Inter-Tandem Conveyance/Inter-Tandem Transit as separate markets. In addition, we concluded that BT had SMP in Single Transit, on the basis that for a large number of smaller CPs only BT was able to provide a transit service to them for the purposes of terminating traffic to their number ranges.²⁸ In addition to this, we identified a wider concern that for NTS traffic, larger CPs may rely on Single Transit instead of direct interconnection which supported our SMP finding.

²⁸ As that term was defined in the 2009 Review.

Developments since the 2009 Review

4.50 In our consultation in April 2012 *Simplifying Non-Geographic Numbers* (2012 NGC Consultation)²⁹ we have set out our proposals on the use of transit services in the NTS regime. In our proposals for NTS we have taken account of the widespread use of transit in the delivery of NTS calls between CPs other than BT and have said how we think the ability for CPs to interconnect directly may impact the use of transit services.

Considerations for this review

4.51 The Single Transit market is not on the list of markets recommended by the European Commission (EC) as a market susceptible to ex-ante regulation. Where a market is not on the Commission's list, we may still consider the need for regulation if the market meets the three criteria set out by the EC:

- the presence of high and non-transitory barriers to entry;
- a market structure which does not tend towards effective competition within the relevant time horizon (i.e. by September 2016); and
- the insufficiency of competition law alone to adequately address the market failure(s) concerned.

4.52 In this review we will therefore consider whether our definition of the Single Transit market in the 2009 Review remains relevant, whether the Single Transit market satisfies the three criteria set out by the EC tests and whether BT retains SMP in the Single Transit market. In doing so we will consider changes in the market arising from the availability of alternate routing options, in particular for routes to smaller CPs (for example the extent to which smaller CPs using VoIP may be reached via means other than Single Transit) and the impact on Single Transit of our proposed approach for the routing of non-geographic calls as set out in the 2012 NGC Consultation.

Question 14: To what extent has competition in the Single Transit market changed since the 2009 Review?

Local-Tandem Conveyance and transit market

Ofcom's position in the 2009 Review

4.53 In the 2009 Review we defined a market for LTC/LTT but found that no undertaking held SMP in that market. We therefore removed all regulation from that market. Our conclusion was based on the extent to which other CPs had implemented interconnection to BT's digital local exchanges (DLEs) and therefore did not require LTC/LTT from BT. We also said that we had taken into account the requirements on BT to provide regulated interconnection services to address competition concerns in the markets for call origination and call termination.

²⁹ Ofcom, *Simplifying non-geographic numbers*, 4 April 2012, http://stakeholders.ofcom.org.uk/consultations/simplifying-non-geographic-no/?utm_source=Media-updates&utm_medium=Media-email&utm_campaign=non-geo-no-mediaNR

Considerations for this review

- 4.54 We will assess whether there has been any material change in the provision of LTC/LTT since the 2009 Review. In doing so we will take into account the level of interconnection in place to BT's DLEs and the extent to which CPs must rely on BT provided LTC/LTT to route traffic to and from BT's DLEs.

Question 15: Do you think that conditions in the LTC/LTT market have changed materially since the 2009 Review? Please explain why.

Section 5

Non-price remedies

Introduction

5.1 In this section and the next, we focus on the remedies which might be appropriate if we observe SMP in the relevant wholesale markets. This section seeks views on the appropriate non-price remedies in the markets of wholesale fixed call origination, wholesale fixed call termination and technical areas going forward – which will depend on the existence and extent of SMP in these markets. In particular, we are interested in views on whether:

- the appropriate regulatory period for notifying changes to charges, terms and conditions in SMP markets should be reduced from the typical 90 day period currently required;
- carrier pre-selection (CPS) and indirect access (IA) obligations remain appropriate;
- an NTS call origination obligation remains appropriate in light of the approach for calls to NTS set out in our 2012 NGC consultation (if our conclusions on that project are consistent with the proposals currently out to consultation);
- operators of TDM networks should be required to provide an IP Interconnection service;
- we should specify the number of points of interconnection for the interworking between TDM and NGNs and how this would relate to the currently defined wholesale markets; and
- if not, what should be the arrangements for interconnection between IP and TDM networks and associated charges?

General non-price remedies

Ofcom's position in the last market review

5.2 In section 1 we summarised the 'general remedies' imposed in the 2009 Wholesale Review. These were imposed in several markets where we determined that a communications provider had SMP. The general non-price remedies comprise:

- requirement to provide network access on reasonable request;
- requirement not to unduly discriminate;
- requirement to publish a reference offer;
- requirement to notify charges, terms and conditions;
- requirement to notify technical information and
- accounting separation;

Considerations for this review

- 5.3 In this review we will consider whether each of the general non-price remedies continues to remain appropriate and proportionate to address a finding of SMP in the relevant market.

Question 16: What general non-price remedies do you consider appropriate and proportionate to address an SMP finding (for the services covered by this review, including in Hull)? Please give your reasons.

Requirement to notify changes to charges, terms and conditions

Ofcom's position in the last market review

- 5.4 During the 2009 Wholesale Review, we proposed to reduce the period of notice that BT was required to give for price changes from 90 days to 28 days. Respondents were concerned that this proposal would cause significant difficulties as their downstream contracts may not allow time for BT's notified price changes to be reflected in retail prices, and as a consequence, we maintained BT's notification period for changes to prices, terms and conditions at 90 days.

Developments since the 2009 Review

- 5.5 We understand that since 2009, industry discussions have been taking place within the context of the review of the revised Standard Interconnection Agreement (SIA).
- 5.6 In these discussions, BT and other CPs have been considering the notification periods within the SIA, which are different for different scenarios. For example, BT has a 90 day notification period in some regulated markets, but for other services the SIA requires 28 days' notice, whilst different notification periods apply in the SIA for CPs' services.. Whilst the terms for services not subject to a regulatory obligation are a matter for industry, some of these notification periods may reflect the conditions we have imposed on BT that have since fallen away (it should be noted that although other CPs have SMP in fixed geographic call termination, they are not required to provide advanced notice of price changes).
- 5.7 In addition, we have granted specific requests for shorter notification periods in other markets and in particular circumstances, where we considered that the shorter notification period would be in the interests of consumers and would not significantly impact competition.
- 5.8 We have recently accepted a dispute in relation to the notice periods applicable under the SIA.³⁰

Considerations for this review

- 5.9 In relation to notification periods, we welcome views from stakeholders on whether 90 days would remain appropriate in wholesale call origination, wholesale call termination and interconnection circuits if we continue to find SMP.

³⁰ Ofcom, *Dispute relating to BT's Standard Interconnect Agreement, February 2012*, http://stakeholders.ofcom.org.uk/enforcement/competition-bulletins/open-cases/all-open-cases/cw_01083/

Question 17: Where there is SMP, what do you consider to be an appropriate notice period for the services covered by this review?

Carrier pre selection and indirect access

Ofcom's position in the 2009 Review

- 5.10 We said in the 2009 Review that CPS and IA had been important contributors to the development of competition in the market. CPS traffic volumes had grown from around 58 million minutes in 2001/2 to over 35 billion minutes in 2007/8. By 2009, Ofcom had issued over 100 CPS Operator Identifier codes to CPs seeking to provide services via CPS.
- 5.11 We also showed that the number of CPS lines had grown to around 6 million in 2006 before the market levelled off. We attributed this to the impact of increasing use of full LLU to provide competition in the provision of exchange lines and calls (as well as broadband services). In the period prior to the last review the number of CPS lines began to decline. We said this was due to a shift from CPS to BT's own wholesale calls service.
- 5.12 In the 2009 Review we concluded that BT had SMP in call origination in the UK except in the Hull area, and that KCOM had SMP in call origination in Hull. At that time, Article 19 of the Universal Service Directive³¹ required us, where SMP was found, to impose carrier selection (CS, also known as IA in the UK) and CPS in the call origination markets where they held SMP. However, we removed the direction requiring BT to comply with the CPS functional specification.³²

Developments since the 2009 Review

- 5.13 Since the 2009 Review the number of fully unbundled lines has grown significantly (see section 3 above). Since 2006, the number of CPS lines has fallen from around 6 million (see above) to around 2.5 million lines in 2012.³³
- 5.14 In addition, the Universal Service Directive has been amended³⁴, along with the related directives. Under the amended directives, we are no longer required to impose CPS and CS/IA remedies. However, Article 12(1)(a) of the amended Access Directive³⁵ leaves open the possibility for Ofcom to impose obligations on CPs with SMP to provide CPS and/or CS/IA.

³¹ Directive 2002/22/EC of the European Parliament and of the Council, 7 March 2002,

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2002:108:0051:0051:EN:PDF>

³² The CPS functional specification set out various features that we considered to be important in delivering a fit for purpose service. We removed the direction obliging BT to comply with this due to the maturity of the CPS service. Instead we said we would rely on BT's obligations to provide network access on reasonable request and its obligation not to unduly discriminate.

³³ Source: *OTA update report*, March 2012, <http://www.offta.org.uk/updates/otaupdate20120403.htm>

³⁴ Directive 2002/22/EC of the European Parliament and of the Council (as amended by Directive 2009/136/EC), 7 March 2002,

http://ec.europa.eu/information_society/policy/ecomm/doc/136univserv.pdf

³⁵ Directive 2002/19/EC of the European Parliament and of the Council (as amended by Directive 2009/136/EC), 7 March 2002,

http://ec.europa.eu/information_society/policy/ecomm/doc/140access.pdf

Considerations for this review

- 5.15 We therefore propose to consider whether CPS and/or CS/IA remain appropriate remedies that should be specifically required (as opposed to, for example, a general obligation to provide access on reasonable request) in the event that we conclude BT holds SMP in the wholesale call origination market.

Question 18: Were we to find that BT has SMP in wholesale call origination, do you consider that CPS and IA remain appropriate remedies?

NTS call origination condition

Ofcom's position in the 2009 Review

- 5.16 In the 2009 Review, as a response to BT's SMP in wholesale call origination, we imposed the NTS call origination condition. This obligation requires BT to retail NTS services provided by other CPs to BT's own retail customers. The NTS call origination condition also includes a restriction on the wholesale charge that BT sets for this service, by restricting the wholesale charge to the cost of conveyance (as set by the call origination charge control) plus charges for BT's retail costs - known as the Retail Uplift (plus PRS Bad Debt Surcharge where applicable).
- 5.17 We concluded that this condition was necessary to ensure that BT did not price above the costs involved in retailing and conveying NTS calls. We said that if BT was able to do this, the effect would be to reduce termination rates paid to the terminating CP. This is because BT's retail charges are set in accordance with the National Telephone Number Plan (NTNP). Therefore, if BT is able to increase its own retention of this retail payment through increased conveyance and/or increased retailing charges, the termination payment would be reduced.

Developments since the last market review

- 5.18 In the 2012 NGC Consultation we have proposed that, for many non-geographic numbers, an unbundled retail tariff structure should be implemented.
- 5.19 In support of this we have also set out how we consider wholesale payments should work, based on determining an "Assumed Handover Point" (AHP), which defines the location where the call is handed over from the originating CP (OCP) to the terminating CP (TCP). We have proposed that TCPs set the termination rate for their own number ranges, based on calls handed over at the AHP. OCPs, including BT, would set an "Access Charge" for chargeable NTS calls which would be designed to recover the cost of conveyance to the AHP and relevant retailing costs.

Considerations for this review

- 5.20 We intend to consider whether an NTS call origination obligation remains appropriate in light of the approach for calls to NTS summarised above and set out more fully in the 2012 NGC Consultation.

Question 19: If we find that BT has SMP in wholesale call origination, do you consider that specific remedies are required for NTS call origination?

IP Interconnection

Ofcom's position in the 2009 Review

- 5.21 In the 2009 Review we discussed the interconnection services that BT was proposing to offer as part of 21CN. This included the 'Multi Service Interconnect Link' which provided the physical connectivity, and the "NGN Call Conveyance" service that allowed services similar to the current call origination (e.g. CPS/IA) and call termination services to be emulated. We also discussed a proposed new service, Wholesale Voice Connect (WVC), which aimed to provide a greater level of control to CPs by allowing them to control certain functions on BT's multi-service access nodes (MSANs) from their own call servers.
- 5.22 We did not impose any obligations on BT to provide these and, in the event, BT did not deploy voice services on 21CN.

Developments since the last market review

- 5.23 In the 2011 FTR Guidance, we considered whether CPs with NGNs should be able to charge a higher FTR to cover the costs of converting IP voice calls into a form capable of being passed over a TDM point of interconnection. Our guidance concluded that typically, the presumption would be that a higher FTR would not be reasonable.
- 5.24 In the 2011 FTR Guidance we also considered whether, where TDM networks (particularly BT) are requested to provide IP interconnection, we should consider this to be a reasonable request for access in the call termination market. We said that if we considered this to be the case, it followed that TDM networks were required to provide this service and, in general, we would expect the service provided via IP interconnection to be offered at the benchmark FTR unless the terminating operator could satisfy a three stage test to justify a higher rate.³⁶
- 5.25 However, we concluded that if the request was for IP Interconnection at non-terminating nodes (such as at tandem exchanges or a limited number of points of interconnection) we should not take this approach, because routing from a limited number of IP interconnection points to BT's DLEs is not a termination service since transit operators can provide a similar service. We also concluded that an IP Interconnection service provided at BT's DLEs would be unlikely to be economically attractive, but to the extent that it was viable it could represent a reasonable request for a call termination service.³⁷

Considerations for this review

- 5.26 In the 2011 FTR Guidance we indicated that we would re-visit the question of whether NGN technology should be considered as the basis for setting FTRs in this

³⁶ This three stage test is summarised in section 6.

³⁷ Ofcom, *Fair and reasonable charges for fixed geographic call termination*, 27 April 2011, <http://stakeholders.ofcom.org.uk/binaries/consultations/778516/statement/fair-reasonable-statement.pdf>, paragraphs 4.58-9.

market review.³⁸ As set out in Section 4, in this review we propose to consider whether NGN technology should be considered as the efficient technology benchmark for the purposes of ex-ante regulation.

- 5.27 We therefore propose to re-visit the issue of whether TDM networks should be required to provide IP interconnection and how this should be realised.

Question 20: Should operators of TDM networks be required to provide an IP Interconnection service?

Question 21: If so, at how many points of interconnection should this be provided and how would this relate to the currently defined wholesale markets?

Question 22: If not, what should be the arrangements for interconnection between IP and TDM networks and associated charges?

³⁸ Ofcom, *Fair and reasonable charges for fixed geographic call termination*, 27 April 2011, <http://stakeholders.ofcom.org.uk/binaries/consultations/778516/statement/fair-reasonable-statement.pdf>, paragraphs 1.11 and 1.16.

Section 6

Pricing remedies

Introduction

- 6.1 This section seeks views on the appropriate price remedies in the markets of wholesale fixed call origination, wholesale fixed call termination and technical areas going forward – which will depend on the existence and extent of SMP in these markets.
- 6.2 In particular, we are interested in views on whether:
- a charge control on wholesale call origination is appropriate, if we were to find SMP in this market;
 - call termination rates should be capped at pure LRIC (rather than set on a LRIC+ basis) and if so, what the appropriate glide path should be and what to do in respect of common cost recovery;
 - any cost model that we use to set rates should be based on the costs of an NGN and whether it should use economic depreciation;
 - there are any grounds to depart from our previous approach to regulating termination rates for CPs other than BT: that is, use of a “fair and reasonable” obligation coupled with guidance on how that should be interpreted (i.e. symmetric rates presumed to be fair and reasonable);
 - a network tariff gradient (i.e. variation in time of day rates) remains a necessary feature for wholesale call conveyance services, or whether we can move to a simpler pricing rule as adopted for MCT.

Wholesale call origination

Ofcom’s position in the 2009 Review

- 6.3 In the 2009 Wholesale Review, we concluded that BT had SMP in the market for wholesale fixed call origination and that charge controls should be applied to these services.

Developments since the 2009 Review

- 6.4 The increase in full LLU deployment documented in section 3 above has led to a significant reduction in BT’s share of exchange lines, in favour of CPs using full LLU. The reduction in BT’s share of exchange lines is likely to have contributed to a corresponding reduction in BT’s share of wholesale call origination. This suggests that the market has become more competitive since the last review.
- 6.5 As noted in section 4 above, in relation to geographic markets, the roll-out of full LLU and increased broadband uptake has also increased the number of exchange lines where direct or indirect substitution to LLU is technically possible. This may indicate a greater degree of variation in local competition.

- 6.6 Moreover, there has been growth in the share of calls originated on mobiles (relative to calls originated on fixed lines) and also growth in the number of VoIP calls.

Considerations for this review

- 6.7 In this review, we will consider whether, if we find SMP in call origination, a charge control remains a necessary and proportionate remedy in this market. Other possible pricing remedies to address a finding of SMP in call origination include:

- a safeguard cap;
- cost orientation,
- reliance on competition law (perhaps coupled with non-price remedies such as a requirement to notify changes to charges and a requirement to provide network access).

Question 23: If we find that BT has SMP in wholesale call origination, which, if any, pricing remedy do you believe would be appropriate to address such SMP? Please explain why.

Wholesale call termination

Ofcom's position in the 2009 Review

- 6.8 In the 2009 Wholesale Review, we concluded that BT had SMP in the market for wholesale fixed call termination and that charge controls should be applied to these services. In addition, charge controls were also required for the technical area of interconnection circuits and PPP which support narrowband interconnection.

Developments since the 2009 Review

- 6.9 As explained in section 4 above, we are not aware of any significant changes since the 2009 Review in respect of the competitive conditions in the markets of wholesale call termination (whether termination of calls to geographic numbers controlled by BT or those controlled by other CPs).
- 6.10 However, there have been a number of regulatory developments in respect of the regulation of termination rates – both at a European level and in terms of regulation of MCT. The most important of these developments to the question of how best to address findings of SMP in fixed call termination markets are discussed below.

Cost modelling

Ofcom's position in the 2009 Review

- 6.11 In the 2009 NCC Statement, we used a hypothetical ongoing network cost model (the 2009 Cost Model) that was based on BT's TDM network.
- 6.12 The 2009 Cost Model is a top-down model based on adjusted data from BT's Regulatory Financial Statements (RFS). It uses a current cost accounting (CCA) depreciation approach and a fully allocated cost (FAC) approach to common cost allocation. In the 2009 NCC Statement, we explained that we preferred CCA FAC

due to its transparency and reliability, continuity with past NCCs and consistency with other fixed charge controls.

- 6.13 When setting charges during the current charge control period, we adopted glide paths for both wholesale call origination and wholesale call termination that aligned charges with the unit cost forecasts at the end of the charge control period.

Basis of charges – pure LRIC

Developments since the 2009 Review

- 6.14 Since the 2009 Review, there have been a number of regulatory developments or decisions:
- i) The **2009 EC Recommendation**, to which Ofcom must have utmost regard, sets out the EC's view on the regulatory treatment of fixed and mobile termination rates in the EU.³⁹ The Recommendation indicated that for regulating termination rates, national regulatory authorities should adopt a bottom-up pure LRIC model.
 - ii) In the **2011 MCT Statement** we concluded that pure LRIC was a more appropriate method than LRIC+ on which to set MTRs.⁴⁰ We set the cap on MTRs on a glide path to pure LRIC by 1 April 2014.
 - iii) The **2012 Competition Commission (CC) Determination** (the CC determination).⁴¹ Our 2011 MCT Statement was appealed to the Competition Appeal Tribunal (CAT) which referred specific price control questions to the CC. The CC Determination concluded that we were correct in adopting pure LRIC for regulating MTRs, but concluded in favour of a shorter glide path (to 1 April 2013) than that set by Ofcom.⁴² The conclusions of the CC Determination in respect of the choice of pure LRIC and a shorter glide path have been accepted by the CAT.⁴³

Considerations for this review

- 6.15 If we conclude that the imposition of a charge control is an effective and proportionate remedy to address SMP in the fixed call termination market, we consider that a number of the arguments discussed in the 2011 MCT Statement, and reviewed in the CC determination (as upheld by the CAT), are likely to be relevant to the way we would approach the setting of such a charge control.

³⁹ *EC Recommendation on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU*, 20 May 2009, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:124:0067:0074:EN:PDF>

⁴⁰ Ofcom, 2011, *Wholesale mobile voice call termination- statement*, 15 March 2011, http://stakeholders.ofcom.org.uk/binaries/consultations/mtr/statement/MCT_statement.pdf

⁴¹ Competition Commission, *BT et al, v Office of Communications, Determination*, 9 February 2012, http://www.competition-commission.org.uk/assets/competitioncommission/docs/appeals/telecommunications-price-control/appeals/final_determination.pdf

⁴² The glide path to pure LRIC (and whether there should have been a first year one-off cut in MTRs) was a matter raised in BT's appeal of Ofcom's 2011 MCT Statement. BT argued that MTRs should be reduced more quickly to pure LRIC than Ofcom had decided. The CC's Determination found in favour of BT on glide path duration, but not on the question of a one-off cut.

⁴³ *BT plc et al v Competition Commission et al* [2012] CAT 11.

- 6.16 We found in the 2011 MCT Statement that the impact on competition from a move to pure LRIC would lead to a better outcome for consumers with regard to its impact on competition amongst MCPs and between Fixed CPs and MCPs.⁴⁴ At this stage, we expect that consideration of competitive impacts is likely to be the most decisive economic factor in determining the appropriate cost base.⁴⁵ In particular, as noted in the 2011 MCT statement, we consider that consistency in the cost base for regulated FTRs and MTRs would be desirable in order to avoid competitive distortions between fixed and mobile services.⁴⁶
- 6.17 Therefore, we expect to follow the 2009 EC Recommendation and adopt pure LRIC as a cost base for FTRs in the next regulatory period.

Question 24: If a charge control remedy is appropriate for call termination, do you agree that we should follow the 2009 EC Recommendation and cap FTRs at pure LRIC?

NGN modelling and calibration

Ofcom's position in the last market review

- 6.18 In the 2009 NCC Statement, we did not believe that it was appropriate for us to model NGN. For example, to our knowledge, no nationwide fixed network operator had fully migrated to an NGN platform. Consequently, we did not believe that it was possible for us to robustly model the costs of a nationwide NGN.⁴⁷

Developments since the last market review

- 6.19 The 2009 EC Recommendation states that NRAs should build bottom-up cost models "...based on efficient technologies available in the timeframe considered by the model". The 2009 EC Recommendation goes on to state that "...the core part of both fixed and mobile networks could in principle be next generation network (NGN)-based".⁴⁸ It also states that "NRAs may compare the results of the bottom-up modelling approach with those of a top-down model which uses audited data..."⁴⁹ This comparison with top-down audited data is often referred to as "calibration" of the cost model.
- 6.20 Since publication of the 2009 EC Recommendation, a number of other EU NRAs have developed, and are using, NGN fixed network models consistent with the 2009

⁴⁴ See, for example, Ofcom, 2011, *Wholesale mobile voice call Termination- statement*, 15 March 2011, http://stakeholders.ofcom.org.uk/binaries/consultations/mtr/statement/MCT_statement.pdf, paragraph 8.96.

⁴⁵ In the 2011 MCT Statement we assessed pure LRIC and LRIC+ against the following criteria: (i) economic efficiency, (ii) competitive impacts, (iii) distributional effects, and (iv) commercial and regulatory consequences.

⁴⁶ Ofcom, 2011, *Wholesale mobile voice call Termination- statement*, 15 March 2011, http://stakeholders.ofcom.org.uk/binaries/consultations/mtr/statement/MCT_statement.pdf 8.101.

⁴⁷ Ofcom, *Review Of BT's Network Charge Controls- statement*, 15 September 2009, http://stakeholders.ofcom.org.uk/binaries/consultations/review_bt_ncc/statement/nccstatement.pdf, 4.53.

⁴⁸ *EC Recommendation on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU*, 20 May 2009, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:124:0067:0074:EN:PDF>, paragraph 4

⁴⁹ *Ibid.*, paragraph 3.

EC Recommendation.⁵⁰ Additionally, there has been further deployment of NGN architecture in other countries.⁵¹

Considerations for this review

6.21 If we build an NGN bottom-up model, there are a number of additional issues that we will need to explore such as:

- the use of an NGN for all NCC services, not just fixed call termination;
- the network design of an efficient NGN covering the whole UK; and
- the calibration of a modelled NGN.

Question 25: The 2009 EC Recommendation states that the core network cost model “could in principle be Next Generation Network (NGN)-based”. Do you consider this to be an appropriate approach to cost modelling for this review?

Question 26: What in your view would be the best way to calibrate such a model, given that BT does not yet operate a national NGN?

Economic Depreciation

Ofcom’s position in the 2009 Review

6.22 In order to calculate the cost of each service, we must determine how the capital and operating costs of assets are recovered over time. The 2009 Cost Model employed a CCA depreciation approach.

Developments since the last market review

6.23 In the 2009 EC Recommendation NRAs are recommended to use economic depreciation (ED) “wherever feasible”.⁵²

6.24 The 2009 EC Recommendation was issued after publication of the 2009 NCC consultation. When finalising the 2009 NCC Statement, we did not consider that we were in a position to set a charge control based on the criteria in the 2009 EC Recommendation.⁵³

⁵⁰ *Study of approaches to fixed call origination and termination charge controls – Report for Ofcom*, 15 May 2012 - Analysys Mason.

⁵¹ *Study of approaches to fixed call origination and termination charge controls – Report for Ofcom*, 15 May 2012 - Analysys Mason.

⁵² *EC Recommendation on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU*, 20 May 2009, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:124:0067:0074:EN:PDF> Section 7. Economic depreciation is the change in the economic value of an asset during the year.

⁵³ Ofcom, *Review of BT’s Network Charge Controls- statement*, 15 September 2009, http://stakeholders.ofcom.org.uk/binaries/consultations/review_bt_ncc/statement/nccstatement.pdf 4.99.

- 6.25 In the 2011 MCT Statement, our preferred approach to depreciation was a form of economic depreciation known as Original Economic Depreciation (Original ED).^{54 55} We consider that this approach to economic depreciation is consistent with the 2009 EC Recommendation. Our use of Original ED in MCT has been supported by the Competition Commission in three previous appeals.⁵⁶
- 6.26 If we use economic depreciation to set fixed geographic termination rates, and where we use the same model to set charges for other NCC services, this would result in the efficient costs of those other services also being calculated using economic depreciation.

Question 27: The 2009 EC Recommendation recommends the use of economic depreciation “wherever feasible”. Do you consider this to be an appropriate approach to cost modelling for this review?

Common cost recovery

Developments since the last market review

- 6.27 If FTRs are set at pure LRIC, no common costs would be recovered through call termination rates. Therefore, the operator will need to recover the common costs from elsewhere – such as through increased charges for other services.

Considerations for this review

- 6.28 Our aim is to allow CPs to recover efficiently incurred costs (including common costs), and to do so without introducing competitive distortions.
- 6.29 We think that the following alternatives are available for the recovery of common costs not recovered from pure LRIC termination rates:
- recovery exclusively from unregulated services (e.g. retail services and many transit and conveyance services);
 - recovery exclusively from regulated services (e.g. WLR and call origination, if still charge controlled); or
 - recovery from both unregulated and regulated services.
- 6.30 Recovering common costs through unregulated (e.g. retail) services only could be considered an appropriate solution as these are provided in competitive markets

⁵⁴ Ofcom, 2011, *Wholesale mobile voice call Termination, Statement*, 15 March 2011, http://stakeholders.ofcom.org.uk/binaries/consultations/mtr/statement/MCT_statement.pdf, 9.55

⁵⁵ Original ED matches cost-recovery to actual and forecast usage and asset price trends over the long term. There is relatively little depreciation in years when utilisation or asset prices are low and relatively high depreciation in years of high equipment utilisation or asset prices.

⁵⁶ *Competition Commission Report, 2002*, http://www.competition-commission.org.uk/rep_pub/reports/2003/475mobilephones.htm
Competition Commission Determination 2009, http://www.competition-commission.org.uk/appeals/communications_act/mobile_phones_determination.pdf
Competition Commission Determination 2012, http://www.catribunal.org.uk/files/1.1180-83_MCT_Determination_Excised_090212.pdf

where all CPs have pricing freedom. This approach would also be consistent with that adopted in the 2011 MCT Statement.

- 6.31 However, in the case of fixed call termination, there is a sub-set of CPs (i.e. CPS and IA operators) which, while purchasing fixed call termination from other CPs, do not levy termination rates themselves. Under pure LRIC, these operators will benefit from paying lower FTRs and will not have to rebalance their own prices to continue recovering common costs. At this stage, we consider that this feature of fixed call termination markets distinguishes the situation from that in MCT regulation. Moreover, in contrast to the mobile operators, BT is also subject to a number of other charge controls – not just on termination – that affect its ability to recover its common costs from other services.

Question 28: With termination rates set on the basis of pure LRIC, from which other services should common costs previously recovered from fixed call termination now be recovered?

Evolution of charges – glide path

Developments since the last market review

- 6.32 The 2009 EC Recommendation set 31 December 2012 as the target date for NRAs to align termination rates to pure LRIC. The current NCC will expire on the 30 September 2013. Therefore, we already expect a 10 month delay on the target implementation date even if we were to align termination rates to pure LRIC immediately in any new charge control. We are also aware that the EC has already expressed serious concerns about delayed transitions to pure LRIC termination rates.⁵⁷
- 6.33 In the 2011 MCT Statement we decided to set MTRs according to a glide path, in which they would align to pure LRIC by 1 April 2014. Following the BT appeal last year, the CC and CAT determined in favour of a reduction in the transition period, by which MTRs will be reduced to pure LRIC by 1 April 2013. The rationale advanced by the CC was that, recognising the benefits of pure LRIC MTRs, MTRs should align to pure LRIC as quickly as reasonable and there was no compelling reason for not reducing the transition period.

Considerations for this review

- 6.34 In the fixed call termination market one of the main arguments generally supporting longer glide paths, dynamic efficiency, is weakened.⁵⁸

⁵⁷ The EC can raise concerns over an NRA's notified measures by issuing a serious doubts letter. Examples of serious doubt letters on delayed transition to pure LRIC are those following the notification by the Spanish NRA (SG-Greffe (2012) D/4105) and the Estonian NRA (SG-Greffe (2012) D/6754).

⁵⁸ For one-way access markets, dynamic efficiency is one of the main arguments supporting a longer glide path, but its relevance appears limited in the case of fixed call termination because (i) a fixed network operator already faces incentives to invest and innovate as call termination largely shares assets with call origination, which we envisage will either be found to be competitive or will be regulated if not, and (ii) the profitability issue arising from the termination rate reduction is mitigated by the two-sided nature of the call termination market (i.e. via the waterbed effect the loss resulting from

- 6.35 Other factors pointing to a shorter glide path to pure LRIC for FTRs include:
- i) the desirability of achieving consistency with MTR regulation so as to avoid unnecessary distortions in the competition between fixed and mobile services; and
 - ii) the desirability of aligning FTRs to pure LRIC with minimal delay beyond the target date envisaged in the EC Recommendation.
- 6.36 Nevertheless, we recognise that issues such as notice periods (regulatory or commercial) may impact on the appropriate time period over which any reductions to pure LRIC, if appropriate, can be implemented.

Question 29: How soon would stakeholders consider it appropriate and practicable for FTRs to be aligned to pure LRIC?

Pricing remedies for other CPs

Ofcom's position in the 2009 Review

- 6.37 In our 2009 Review we concluded that all fixed network CPs had SMP in the provision of their fixed geographic call termination services to other CPs.
- 6.38 With regards to CPs other than BT, we confirmed that the obligation to provide network access, and to do so on fair and reasonable terms, was proportionate and effective to address their SMP in fixed geographic call termination.
- 6.39 In the 2009 Review, we reiterated that fair and reasonable FTRs were likely to be rates set so as to be reciprocal to BT's rates (which were capped by a charge control aimed at achieving an efficient level of FTRs). The rationale supporting reciprocity to BT's rates was that reciprocity would: (i) avoid competitive distortions in the retail market, (ii) provide incentives to cost minimisation, (iii) had an efficient signalling effect in terms of "make or buy" decisions, and (iv) was straightforward to implement.
- 6.40 Industry practice, in complying with the fair and reasonable obligation, resulted in reciprocal FTRs set according to a formula in an agreement, commonly referred to as the 'reciprocity agreement' (RA), which took into account topology differences in CPs' networks. Under the RA, FTRs were effectively set as a blend of BT's Local Exchange and Single Tandem rates weighted on each CP's outbound geographic call traffic to BT's network.

Developments since the 2009 Review

- 6.41 Since the 2009 Review some significant regulatory changes have occurred and are likely to affect the identification of the most appropriate remedies. In particular,
- i) **The 2009 EC Recommendation.** The Recommendation sets out that FTRs should be symmetric across CPs and any deviation should be based on objective

the call termination rate reduction can be compensated for via price increases on the other side of the market, i.e. for subscription and/or usage).

cost differences outside the control of operators.⁵⁹ The recitals to the Recommendation further add, that *“In fixed networks, no such objective cost differences outside the control of the operator have been identified.”*⁶⁰

- ii) **The 2011 FTR Guidance.** In April 2011 we provided guidelines on how CPs could set their FTRs in compliance with the fair and reasonable obligation and concluded that FTRs would be presumed to be fair and reasonable when they were symmetric to the benchmark FTR – taken as BT’s LE rate. Deviation from symmetry would only be considered fair and reasonable where it satisfied a three stage test, in particular:
- charging an FTR equal to the Benchmark FTR would deny the recovery of the actual costs of providing fixed call termination; and
 - those actual costs were efficiently incurred; and
 - charging a higher FTR than the Benchmark FTR would be offset by demonstrable consumer benefit.⁶¹

Symmetric FTRs

Considerations for this review

- 6.42 At this stage, and in light of the above, we anticipate regulating the FTRs of all CPs on a symmetric basis at the benchmark charge control level – i.e. the pure LRIC rate.

Question 30: Do you agree that we should follow the 2009 EC Recommendation and regulate the termination rates of all fixed CPs at a symmetric level?

“Fair and reasonable” or a charge control obligation?

Considerations for this review

- 6.43 If it is appropriate to regulate FTRs on a symmetric basis, we have to select the most appropriate regulatory obligation by which to achieve this.
- 6.44 At this stage we envisage the choice being between (i) maintaining a fair and reasonable obligation (accompanied by the presumption that a fair and reasonable FTR is symmetric to the benchmark charge controlled rate) and (ii) imposing a symmetric charge control obligation on all CPs providing fixed call termination.
- 6.45 Proportionality will likely be a key element in identifying the most appropriate remedy. A charge control obligation is a relatively intrusive form of regulation. While it can

⁵⁹ EC Recommendation on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU, 20 May 2009, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:124:0067:0074:EN:PDF>, paragraph (1)

⁶⁰ *Ibid.*, recital 16.

⁶¹ See, for example, Ofcom, *Fair and reasonable charges for fixed geographic call termination*, 27 April 2011, <http://stakeholders.ofcom.org.uk/binaries/consultations/778516/statement/fair-reasonable-statement.pdf>, paragraph 6.8.

provide regulatory certainty (both for buyers and the sellers on whom the regulation is imposed), demonstrating compliance often involves costs for CPs and for Ofcom.⁶²

Question 31: Is it more appropriate to achieve symmetry of fixed termination rates by imposing a 'fair and reasonable' condition or a charge control on all providers with SMP in fixed call termination?

Additional pricing issues

Time of day rates

Ofcom's position in the last market review

- 6.46 In the 2009 NCC Statement, Ofcom imposed charge controls on four baskets:
- call origination;
 - call termination;
 - interconnection circuits; and
 - PPP.
- 6.47 BT is required to ensure that the average of the charges of the services within the above baskets do not exceed the cap applicable for the basket in question.
- 6.48 BT disaggregates the prices within the call origination, call termination and PPP baskets by a time of day gradient depending on whether the call is during the day, evening or weekend period. This is also referred to as the 'network tariff gradient'.
- 6.49 BT's network tariff gradient is derived from BT's retail volumes and prices and aims to reflect the demand placed on its network.⁶³ At times of (relatively) high network demand the gradient serves to increase the wholesale price which, in turn, flows through to retail prices. For example, higher wholesale daytime rates, if passed onto end-users through retail prices might encourage more efficient use of the network by shifting demand to less busy periods.
- 6.50 However, there is no existing SMP requirement on BT to calculate the network tariff gradient as it does and the NCC does not impose charge control obligations on BT that are disaggregated by time of day.⁶⁴
- 6.51 When setting the current NCC, we recognised the role that a network tariff gradient could play for BT as a peak-load pricing mechanism to reflect traffic profiles and demand elasticities at the wholesale level. However, we also noted that since an

⁶² For example, the more charge controlled CPs there are, the more charge control compliance returns there are for Ofcom to process. Moreover, where CPs have not previously had to provide charge control returns to the regulator, they will have to set up (and incur the ongoing expense) of demonstrating compliance.

⁶³ BT Wholesale, *BT's Network Tariff Gradient*, <https://www.btwholesale.com/shared/document/CPL/RHS/timeofday.doc>

⁶⁴ Whilst as part of its notification obligation BT is required to publish the Network Tariff Gradient, there is no requirement on BT relating to how the Network Tariff Gradient should be calculated.

increasing percentage of calls were sold in packages of inclusive bundled minutes at the retail level, the retail tariff gradient was becoming a less useful tool for setting the network tariff gradient.

Developments since the 2009 Review

- 6.52 Our preliminary view is that the evidence suggests that the relationship between the retail tariff gradient and the network tariff gradient as a mechanism to manage traffic loading on the network is still further reduced. This is illustrated by:
- Fixed CPs competing with retail packages that provide unlimited calls (at all times of the day) to geographic number ranges for a fixed monthly fee.⁶⁵
 - MCPs competing with retail packages that offer inclusive call minutes (including calls to geographic number ranges) and line rental for a fixed monthly fee; and
 - MCPs pricing calls to geographic number ranges that are independent of the time-of-day of the call.
- 6.53 In the 2011 MCT statement, we addressed the issue of time-of-day rates set by MCPs. To address the problem of flip-flopping,⁶⁶ Ofcom imposed a simpler pricing rule for MTRs, that set a ceiling on MTRs whilst allowing flexibility of rates below that ceiling.
- 6.54 In relation to BT's charging for call termination, call origination and PPP, the current charge control is also based on prior year weighting. While we are not aware that flip-flopping has been a problem in practice for call origination or termination services provided by BT, the current arrangements allow a degree of pricing flexibility and may therefore not be immune to some form of gaming.

Considerations for this review

- 6.55 We consider that a simpler pricing rule akin to that used to regulate MTRs could offer benefits – in the event that a charge control is imposed in the relevant wholesale call conveyance markets.
- 6.56 The simplicity of the pricing rule would reduce compliance costs for BT and for Ofcom. There would be no need for BT to incur the costs of analysing and predicting whether or not it was on course to meet a weighted average cap. BT's charge control returns would therefore be much simplified – as would Ofcom's verification of them.
- 6.57 Similarly, purchasers of call termination and origination from BT would benefit from the certainty of a simpler set of prices. In addition, where other CPs are setting their

⁶⁵ For example, BT's 'Unlimited Anytime Calls' package, Virgin's 'Talk Unlimited' package, Talk Talk's 'Talk UK Anytime' package, and Sky's 'Sky Talk Unlimited' package.

⁶⁶ Flip-flopping is the use of pricing freedom in relation to call termination rates such that time-of-day rates fluctuate in order to secure more revenue under the charge control (than envisaged by Ofcom when setting the cap). This gaming of the charge control arises as a result of the use of prior year weights in the charge control formula.

termination rates symmetrically with BT's, the calculation of symmetric rates would also be simplified.⁶⁷

Question 32: Are different "time-of-day" rates likely to be important in setting efficient wholesale call rates for call termination and origination during the period from 2013-2016?

Question 33: Is there any reason not to adopt a maximum ceiling for regulated wholesale call conveyance rates – similar to our approach in the regulation of mobile call termination?

⁶⁷ That is, where BT sets different day, evening and weekend rates from those that another terminating CP may wish to set, the question arises as to whether symmetry should be taken to mean symmetry in the average of those rates, or symmetry in the specific rates for each charging period.

Annex 1

Responding to this Call for Inputs

How to respond

- A1.1 Ofcom invites written views and comments on the issues raised in this document, to be made **by 5pm on 28 June 2012**.
- A1.2 Ofcom strongly prefers to receive responses using the online web form at <http://stakeholders.ofcom.org.uk/consultations/narrowband-market-review-call/howtorespond/form> as this helps us to process the responses quickly and efficiently. We would also be grateful if you could assist us by completing a response cover sheet (see Annex 3), to indicate whether or not there are confidentiality issues. This response coversheet is incorporated into the online web form questionnaire.
- A1.3 For larger consultation responses - particularly those with supporting charts, tables or other data - please email NarrowbandMarketReview@ofcom.org.uk attaching your response in Microsoft Word format, together with a consultation response coversheet.
- A1.4 Responses may alternatively be posted or faxed to the address below, marked with the title of the consultation.
- Keith Hatfield
Floor 4
Competition Group
Riverside House
2A Southwark Bridge Road
London SE1 9HA
- Fax: 020 7981 3417
- A1.5 Note that we do not need a hard copy in addition to an electronic version. Ofcom will acknowledge receipt of responses if they are submitted using the online web form but not otherwise.
- A1.6 It would be helpful if your response could include direct answers to the questions asked in this document, which are listed together at Annex 4. It would also help if you can explain why you hold your views and how Ofcom's proposals would impact on you.

Further information

- A1.7 If you want to discuss the issues and questions raised in this consultation, or need advice on the appropriate form of response, please contact Keith Hatfield on 020 7981 3417.

Confidentiality

- A1.8 We believe it is important for everyone interested in an issue to see the views expressed by consultation respondents. We will therefore usually publish all

responses on our website, www.ofcom.org.uk, ideally on receipt. If you think your response should be kept confidential, can you please specify what part or whether all of your response should be kept confidential, and specify why. Please also place such parts in a separate annex.

- A1.9 If someone asks us to keep part or all of a response confidential, we will treat this request seriously and will try to respect this. But sometimes we will need to publish all responses, including those that are marked as confidential, in order to meet legal obligations.
- A1.10 Please also note that copyright and all other intellectual property in responses will be assumed to be licensed to Ofcom to use. Ofcom's approach on intellectual property rights is explained further on its website at <http://www.ofcom.org.uk/about/accoun/disclaimer/>
- A1.11 Please note that you can register to receive free mail Updates alerting you to the publications of relevant Ofcom documents. For more details please see: http://www.ofcom.org.uk/static/subscribe/select_list.htm

Ofcom's consultation processes

- A1.12 Ofcom seeks to ensure that responding to a consultation is easy as possible. For more information please see our consultation principles in Annex 2.
- A1.13 If you have any comments or suggestions on how Ofcom conducts its consultations, please call our consultation helpdesk on 020 7981 3003 or e-mail us at consult@ofcom.org.uk . We would particularly welcome thoughts on how Ofcom could more effectively seek the views of those groups or individuals, such as small businesses or particular types of residential consumers, who are less likely to give their opinions through a formal consultation.
- A1.14 If you would like to discuss these issues or Ofcom's consultation processes more generally you can alternatively contact Graham Howell, Secretary to the Corporation, who is Ofcom's consultation champion:

Graham Howell
Ofcom
Riverside House
2a Southwark Bridge Road
London SE1 9HA

Tel: 020 7981 3601

Email Graham.Howell@ofcom.org.uk

Annex 2

Ofcom's consultation principles

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

Before the consultation

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

During the consultation

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

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

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

A2.6 A person within Ofcom will be in charge of making sure we follow our own guidelines and reach out to the largest number of people and organisations interested in the outcome of our decisions. Ofcom's 'Consultation Champion' will also be the main person to contact with views on the way we run our consultations.

A2.7 If we are not able to follow one of these principles, we will explain why.

After the consultation

A2.8 We think it is important for everyone interested in an issue to see the views of others during a consultation. We would usually publish all the responses we have received on our website. In our statement, we will give reasons for our decisions and will give an account of how the views of those concerned helped shape those decisions.

Annex 3

Consultation response cover sheet

- A3.1 In the interests of transparency and good regulatory practice, we will publish all consultation responses in full on our website, www.ofcom.org.uk.
- A3.2 We have produced a coversheet for responses (see below) and would be very grateful if you could send one with your response (this is incorporated into the online web form if you respond in this way). This will speed up our processing of responses, and help to maintain confidentiality where appropriate.
- A3.3 The quality of consultation can be enhanced by publishing responses before the consultation period closes. In particular, this can help those individuals and organisations with limited resources or familiarity with the issues to respond in a more informed way. Therefore Ofcom would encourage respondents to complete their coversheet in a way that allows Ofcom to publish their responses upon receipt, rather than waiting until the consultation period has ended.
- A3.4 We strongly prefer to receive responses via the online web form which incorporates the coversheet. If you are responding via email, post or fax you can download an electronic copy of this coversheet in Word or RTF format from the 'Consultations' section of our website at www.ofcom.org.uk/consult/.
- A3.5 Please put any parts of your response you consider should be kept confidential in a separate annex to your response and include your reasons why this part of your response should not be published. This can include information such as your personal background and experience. If you want your name, address, other contact details, or job title to remain confidential, please provide them in your cover sheet only, so that we don't have to edit your response.

Cover sheet for response to an Ofcom consultation

BASIC DETAILS

Consultation title:

To (Ofcom contact):

Name of respondent:

Representing (self or organisation/s):

Address (if not received by email):

CONFIDENTIALITY

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

Nothing

Name/contact details/job title

Whole response

Organisation

Part of the response

If there is no separate annex, which parts?

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

DECLARATION

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

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

Name

Signed (if hard copy)

Annex 4

Consultation questions

A4.1 In this Call for Inputs, we have identified the following questions that we would like stakeholders to consider. These are:

Section 2: Scope of the market review

Question 1: What are the main issues we should examine in this market review?

Question 2: Are there particular problems or issues in these markets that this review should address? Where you identify a problem, please explain why you believe regulation to be an appropriate response?

Section 3: Retail Markets

Question 3: What are your views on the current state of competition in the market for retail narrowband services in the United Kingdom (excluding the Hull area)? How do you think this might change over the next 3 to 4 years?

Question 4: What are your views on the state of retail competition in the market for retail narrowband services in Northern Ireland?

Question 5: What are your views on the state of retail competition in the Hull area?

Section 4: Wholesale Markets Definition and SMP

Question 6: To what extent have changes in wholesale charges (such as for wholesale call origination and termination) affected the pricing of retail services, including line rental charges, number of bundled minutes, bundle composition and call prices? Please distinguish between residential and business packages where appropriate.

Question 7: Do you consider there has been a sufficient increase in the competitive constraint from mobile and/or VoIP on wholesale call origination since the last market review such that they should now be included in the same relevant market? Please distinguish between the direct and indirect constraints from each where appropriate.

Question 8: As the deployment of LLU has increased, should services provided over LLU be considered in the same relevant market as wholesale fixed call origination services provided by BT?

Question 9: To what extent do you think that competitive conditions vary materially in different areas, or is fixed call origination subject to broadly similar competitive conditions across the country?

Question 10: To what extent do you think there has been a material change in competitive conditions that would impact our SMP analysis for wholesale call origination on fixed networks?

Question 11: Do you consider that individual CP's number ranges are a relevant factor in defining the relevant market in fixed call termination?

Question 12: Do you consider that there have been any changes in the markets for fixed call termination that would be relevant in our assessment of SMP in these markets?

Question 13: Does the deployment of NGNs by a number of CPs change the way we might define the markets of wholesale call origination and termination? For example, should the definition of these markets take into account the reduced number of points of interconnection that would exist in an NGN?

Question 14: To what extent has competition in the Single Transit market changed since the 2009 Review?

Question 15: Do you think that conditions in the LTC/LTT market have changed materially since the 2009 Review? Please explain why.

Section 5: Non-Price Remedies

Question 16: What general non-price remedies do you consider appropriate and proportionate to address an SMP finding (for the services covered by this review, including in Hull)? Please give your reasons.

Question 17: Where there is SMP, what do you consider to be an appropriate notice period for the services covered by this review?

Question 18: Were we to find that BT has SMP in wholesale call origination, do you consider that CPS and IA remain appropriate remedies?

Question 19: If we find that BT has SMP in wholesale call origination, do you consider that specific remedies are required for NTS call origination?

Question 20: Should operators of TDM networks be required to provide an IP Interconnection service?

Question 21: If so, at how many points of interconnection should this be provided and how would this relate to the currently defined wholesale markets?

Question 22: If not, what should be the arrangements for interconnection between IP and TDM networks and associated charges?

Section 6: Pricing Remedies

Question 23: If we find that BT has SMP in wholesale call origination, which, if any, pricing remedy do you believe would be appropriate to address such SMP? Please explain why.

Question 24: If a charge control remedy is appropriate for call termination, do you agree that we should follow the 2009 EC Recommendation and cap FTRs at pure LRIC?

Question 25: The 2009 EC Recommendation states that the core network cost model "could in principle be Next Generation Network (NGN)-based". Do you consider this to be an appropriate approach to cost modelling for this review?

Question 26: What in your view would be the best way to calibrate such a model, given that BT does not yet operate a national NGN?

Question 27: The 2009 EC Recommendation recommends the use of economic depreciation “wherever feasible”. Do you consider this to be an appropriate approach to cost modelling for this review?

Question 28: With termination rates set on the basis of pure LRIC, from which other services should common costs previously recovered from fixed call termination now be recovered?

Question 29: How soon would stakeholders consider it appropriate and practicable for FTRs to be aligned to pure LRIC?

Question 30: Do you agree that we should follow the 2009 EC Recommendation and regulate the termination rates of all fixed CPs at a symmetric level?

Question 31: Is it more appropriate to achieve symmetry of fixed termination rates by imposing a ‘fair and reasonable’ condition or a charge control on all providers with SMP in fixed call termination?

Question 32: Are different “time-of-day” rates likely to be important in setting efficient wholesale call rates for call termination and origination during the period from 2013-2016?

Question 33: Is there any reason not to adopt a maximum ceiling for regulated wholesale call conveyance rates – similar to our approach in the regulation of mobile call termination?

Annex 5

Links to relevant documents

Ofcom Documents

- “The 2009 Retail Review”, *Fixed Narrowband Retail Services Markets - Identification of markets and determination of market power*, 15 September 2009, http://stakeholders.ofcom.org.uk/consultations/retail_markets/statement/
- “The 2009 Wholesale Review”, *Review of the Fixed Narrowband Services Wholesale Markets- statement on the markets, market power determinations and remedies including further consultation*, 15 September 2009, http://stakeholders.ofcom.org.uk/consultations/wnmr_statement_consultation/summary
- *Review of the Retail and Wholesale ISDN30 Markets* 20 August 2010, <http://stakeholders.ofcom.org.uk/consultations/isdn30/?a=0>
- *Review of the Fixed Narrowband Services Wholesale Markets-further statement on the wholesale transit markets and remedies in the wholesale call termination market*, 5th February 2010, http://stakeholders.ofcom.org.uk/binaries/consultations/wnmr_statement_consultation/statement/statement.pdf
- *Review of the Wholesale Local Access Market-statement on market definition, market power determinations and remedies*, 7 October 2010, http://stakeholders.ofcom.org.uk/binaries/consultations/wla/statement/WLA_statement.pdf
- *Review of the Wholesale Fixed Analogue Exchange Lines Markets- statement on market definition, market power determinations and remedies*, 20 December 2010, <http://stakeholders.ofcom.org.uk/consultations/review-wholesale-fixed-exchange/statement>
- “The 2009 NCC Statement”, *Review Of BT’s Network Charge Controls-statement*, 15 September 2009, http://stakeholders.ofcom.org.uk/binaries/consultations/review_bt_ncc/statement/nccstatement.pdf
- “The 2011 MCT statement”, *Wholesale mobile voice call termination- statement* 15 March 2011, <http://stakeholders.ofcom.org.uk/consultations/mtr/statement>
- “The 2011 FTR Guidance”, *Fair and reasonable charges for fixed geographic call termination*, 27 April 2011, <http://stakeholders.ofcom.org.uk/binaries/consultations/778516/statement/fair-reasonable-statement.pdf>
- “The 2010 NGN Statement”, *Next Generation Networks*, 28 January 2010, http://stakeholders.ofcom.org.uk/binaries/consultations/ngndevelopments/statement/ngn_statement.pdf

- “The 2012 simplifying non-geographic numbers consultation”, *Simplifying non-geographic numbers*, 4 April 2012, http://stakeholders.ofcom.org.uk/consultations/simplifying-non-geographic-no/?utm_source=Media-updates&utm_medium=Media-email&utm_campaign=non-geo-no-mediaNR
- The 2012 dispute relating to BT’s Standard Interconnect Agreement, 14 February 2012, http://stakeholders.ofcom.org.uk/enforcement/competition-bulletins/open-cases/all-open-cases/cw_01083/

Other Documents

- EC, Revised European Framework for Electronic Communications, 18 December 2009, http://ec.europa.eu/information_society/policy/ecomm/index_en.htm
- Directive 2002/22/EC of the European Parliament and of the Council, 7 March 2002, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2002:108:0051:0051:EN:PDF>
- *Directive 2002/22/EC of the European Parliament and of the Council (as amended by Directive 2009/136/EC)*, 7 March 2002, http://ec.europa.eu/information_society/policy/ecomm/doc/136univserv.pdf
- *Directive 2002/19/EC of the European Parliament and of the Council (as amended by Directive 2009/136/EC)*, 7 March 2002, http://ec.europa.eu/information_society/policy/ecomm/doc/140access.pdf
- *EC Recommendation on the Regulatory Treatment of Fixed and Mobile Termination Rates in the EU*, 20 May 2009, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:124:0067:0074:EN:PDF>
- Competition Commission, *BT et al, v Office of Communications, Determination*, 9 February 2012, http://www.competition-commission.org.uk/assets/competitioncommission/docs/appeals/telecommunications-price-control/appeals/final_determination.pdf
- *Competition Commission Determination, 2002*, http://www.competition-commission.org.uk/rep_pub/reports/2003/475mobilephones.htm
- *Competition Commission Determination 2009*, http://www.competition-commission.org.uk/appeals/communications_act/mobile_phones_determination.pdf
- *Competition Commission Determination 2012*, http://www.catribunal.org.uk/files/1.1180-83_MCT_Determination_Excised_090212.pdf
- BT Wholesale, *BT’s Network Tariff Gradient*, <https://www.btwholesale.com/shared/document/CPL/RHS/timeofday.doc>

Annex 6

Glossary

21CN: BT's planned, but not implemented, next generation network upgrade.

Assumed Handover Point (AHP): the location where a call is handed over from the OCP to the TCP for the purposes of connecting the call to the end-user.

BT: British Telecommunications plc

CAT: Competition Appeal Tribunal

CC: Competition Commission

CFI: 'Call for Inputs'

Charge control: A control which sets the maximum price that a communication provider can charge for a particular product or service. Most charge controls are imposed for a defined period.

Common costs: Costs which are shared by all the services supplied by a firm.

Communications Act or "the Act": Communications Act 2003

Cost orientation: The principle that the price charged for the provision of a service should reflect the underlying costs incurred in providing that service.

CP: Communications Provider

Carrier Pre-Selection (CPS): is the facility offered to customers which allows them to opt for certain defined classes of call to be carried by an operator selected in advance without having to dial a routing prefix or follow any other different procedure to invoke such routing.

CS: Carrier Selection (see IA)

Current cost accounting (CCA): An accounting convention, where assets are valued and depreciated according to their current replacement cost whilst maintaining the operating or financial capital of the business entity.

Digital Local Exchange (DLE): The telephone exchange to which customers are connected, usually via a concentrator.

EC: European Commission

ED: Economic Depreciation

End-user: The final consumer of a product or service

Fully Allocated Cost (FAC): An accounting approach under which all the costs of the company are distributed between its various products and services. The fully allocated cost of a product or service may therefore include some common costs that are not directly attributable to the service.

FCP: Fixed Communications Provider

Fixed Termination Rate (FTR): The wholesale charge levied by FCPs for Fixed Call Termination.

Indirect Access (IA): is a facility which allows a customer to opt for calls to be carried by an operator which is different to the operator that provides the network to which the customer is connected, on a call by call basis, by dialling a routing prefix to invoke such routing.

ISDN2: A digital telephone line service that supports telephony and switched data services. ISDN2 provides the calling or data capacity equivalent to two analogue telephone lines

ISDN30: A digital telephone service that provides up to the equivalent of 30 analogue lines over a common digital bearer circuit. These lines provide digital voice telephony, data services and a wide range of ancillary services

ISP: Internet Service Provider

ITC/ITT: Inter-tandem conveyance and transit

KCOM: KCOM Group PLC, formally Kingston Communications

Local Loop: The access network connection between the customer's premises and the local serving exchange, usually comprised of two copper wires twisted together.

Local loop unbundling (LLU): A process by which a dominant provider's local loops are physically disconnected, or partially disconnected, from its network and connected to competing provider's networks. This enables operators other than the incumbent to use the local loop to provide services directly to customers.

Long Run Incremental Costs (LRIC) or pure LRIC: LRIC is defined as the long run avoidable cost of an operator carrying a particular increment of traffic. The increment in question is treated as the final traffic increment on the network,

Long Run Incremental Costs Plus (LRIC+): The long run (average) incremental costs plus an equi-proportionate mark-up for the recovery of shared and common costs. LRIC+ should be taken to mean the same as LRAIC+ (a term used by some other NRAs).

LTC/LTT: Local-tandem conveyance and transit

MCP: Mobile Communications Provider

Mobile Call Termination (MCT): The service provided by a MCP to allow an OCP to connect a caller with the intended mobile call recipient on that MCP's network.

Modern Equivalent Asset (MEA): An approach to setting charges that bases costs on what is believed to be the most efficient available technology that performs the same function as the old technology.

Multiple Service Access Node (MSAN): A device typically installed in a telephone exchange (although sometimes in a roadside cabinet), which connects customers telephone lines to the core network, to provide telephony, ISDN, and broadband all from a single platform.

Mobile Termination Rate (MTR): The wholesale charge levied by MCPs for MCT.

NCC: Network Charge Control (see charge control)

Next generation network (NGN): A network that uses IP technology in the core and backhaul to provide multiple services over a single platform.

National Regulatory Authority (NRA): The relevant communications regulatory body for each country in the EU. Ofcom is the NRA for the UK.

NTNP: National Telephony Number Plan

NTS: Number Translation Services

Originating CP (OCP): The CP of the end-user making a call, i.e. the CP from which the call originates.

OECD: Organisation for Economic Co-operation and Development.

Ofcom: The Office of Communications.

PAYG: pay as you go.

Product Management, Policy and Planning (PPP): Overheads associated with marketing activities, customer service management, billing and finance activities directly related to the regulated service.

Public Switched Telephony Network (PSTN): The telephony network used to provide telephone calls using (or emulating) circuit-switching and using telephone numbers to identify subscribers or called locations, allowing all customers connected to the network to call all other customers.

Pure LRIC: Pure Long Run Incremental Costs

Regulatory Financial Statements (RFS): The financial statements that BT is required by Ofcom to prepare, have audited and publish.

Revised Standard Interconnection Agreement (SIA): BT's standard terms and conditions for the provision of interconnection and related services.

SMP: Significant Market Power

SSNIP: Small but Significant Non-transitory Increase in Price

Terminating CP (TCP): The CP of the end-user receiving a call, i.e. the CP from which the call terminates.

Time Division Multiplex (TDM): A method of putting multiple data streams in a single signal by separating the signal into many segments, each having a very short duration. Each individual data stream is reassembled at the receiving end based on the timing.

Time of day: The variation in call charge rates across daytime, evening and weekend calls.

Voice over Internet Protocol (VoIP): The traffic method of carrying voice calls on fixed and mobile networks by packetizing speech and carrying it using IP.

WFAEL: Wholesale fixed analogue exchanges lines

WLA: Wholesale Local Access

Wholesale Line Rental (WLR): The service offered by BT to other UK communications providers to enable them to offer retail line rental services in competition with BT's own retail services. Line rental is offered along with calls (and other service elements, such as broadband) to retail customers.