Personal numbering

Review of the 070 number range

CONSULTATION:

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About this document

070 numbers are designed to be used as a personal or ‘follow-me’ service, and are sometimes confused with mobile numbers. We are concerned about this confusion, and consumers potentially facing high charges when calling 070 numbers, as well as evidence of these numbers being misused for fraudulent purposes.

In this document, we set out our provisional assessment of the market for terminating 070 numbers, and proposals for the regulation of this market. This forms part of the Call Cost Review we announced in May 2017.

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1. Executive summary

1.1 On 12 May 2017, Ofcom announced the launch of a Call Cost Review to examine the cost of calling 118 and 070 numbers, to ensure that people are protected from high prices and unfair practices in relation to the use of those numbers. This is the first public consultation related to the Call Cost Review, where we focus on the 070 range.

1.2 With respect to 070, we stated our concern with the cost of calling these numbers, consumer confusion as to the role and cost of these numbers, and their frequent misuse.

1.3 Personal or 'follow-me' numbers, which operate in the dedicated 070 number range, allow individuals to offer a single contact number which they can route to a fixed or mobile number of their preference, either permanently or in response to changes in circumstances. These numbers were established in the 1990s to deal with the demand (pre-mobile roaming) for a single number which could be used while travelling domestically or internationally.

1.4 The key attributes of a personal numbering service include:[1]

- a single contact number for family, friends, and business colleagues;
- network independence (the owner of a personal number can change their provider without changing telephone number);
- a follow-me-anywhere service that is easy to use; and
- ancillary services such as voice mail and messaging services.

Background and purpose of review

1.5 Wholesale charges for calls made to 070 numbers (the "termination rates") were set commercially in the early 2000s, and were designed to allow for the recovery of the full cost of the service, including the cost of redirection of the calls. Given the high cost of mobile and international call termination at that time, the wholesale charges for 070 termination were necessarily quite high in order to fully recover all costs.

1.6 Since then, while most wholesale termination rates for other numbers have decreased, those for 070 have not changed. This means the 070 rate is high relative to the wholesale cost of the service. Further, 070 rates are relatively high compared to other services. For example, these rates are approximately 40 pence per minute (ppm), while mobile termination rates in the UK are around 0.5ppm.

1.7 The wholesale costs of connecting a 070 call to a recipient are currently recovered fully from the retail charge paid by the calling party. This includes the cost of re-routing callers to UK geographic numbers, UK mobile numbers, and international numbers. Consumers who call 070 numbers are therefore charged more than for similar length calls to national or mobile numbers, and such calls charges are never included in call bundles.

[1] https://www.ofcom.org.uk/__data/assets/pdf_file/0020/47180/statement.pdf

1.8 Evidence gathered from market research suggests that consumers generally do not distinguish 070 ranges from the mobile ranges. This means that, when making calls to 070 numbers, consumers often mistakenly believe that they are calling a mobile number, and are therefore being charged at the retail charge for a call to a mobile number, or that the call is included in their call bundle, when this is not the case.

1.9 The revenue available from high call termination charges also encourages the use of these numbers by companies offering short term contact numbers, for example, those included in classified advertisements which can then be re-routed to the advertisers own permanent number. While this can be of value to the advertiser, at current call prices, it may impose a significant (and generally unanticipated) high cost to the caller.

1.10 We consider that the relatively high termination rate for calls to 070 numbers, and the fact that callers are not generally well attuned to distinguishing 070 ranges from the mobile ranges, has led to the following poor outcomes:

- **Excessive prices**: High call termination rates discourage telecoms providers from including these calls in inclusive call bundles and encourage relatively high retail prices.
- **Bill shock**: In light of high retail prices, callers' confusion between 070 numbers and mobile numbers leads to unexpectedly high bills;
- **Distorted choices between using 070 and other forms of roaming**: As calls to 070 numbers are generally free to call recipients, they do not face the true cost of their choice and so usage of 070 numbers compared to just relying on mobile roaming or other services may therefore be higher than is socially desirable;
- **Service provider fraud**: For example, missed call scams, where the consumer may return a call to a 070 number as they mistake it for a mobile number, or the promotion of fake job advertisements with a 070 contact number;
- **International artificial traffic inflation**: Where UK operators contrive to promote traffic to their numbers in situations where the cost of making the call is lower than the payment to the UK operator due to the fact that non-UK telecoms providers have not identified 070 as being different from a UK mobile; and
- **Identity-related fraud**: Because service providers are not usually recovering the cost of termination from the call recipient (i.e. their own customers), they do not need to have details of the recipients' true identity or establish payment links, which means that 070 numbers can be potentially used for criminal activity where a recipient's true identity is concealed.[2]

1.11 Evidence suggests that the 070 number range has been attracting an increasing level of fraud. Over an 18-month period, fraud of c£17m was reported to the police.[3] However, there is evidence to suggest that up to 60% of all calls are to fraudsters and other misusers

[2] In addition, we consider that evidence suggests that misuse of the 070 range has in the past undermined the use of these numbers for innovative delivery of electronic communications services.

[3]According to a 2013 National Fraud Intelligence Bureau (NFIB) report to Ofcom, there were 4,596 offences reported to 'Action Fraud' in the period 1 January 2011 to 31 July 2013 that related to Personal Numbering Services (PNS)

of the range[4] which would suggest unreported fraud against consumers and businesses is far higher.

1.12 This review aims to address these competition and consumer concerns, which arise from the high wholesale charges, by considering whether such high charges are a result of significant market power by the operators of these number ranges, and if so what should be done to address this market power. This review is part of our broader Call Cost Review programme, which we announced in May 2017.

Provisional finding of SMP and proposed response

1.13 We have provisionally found that each telecoms provider allocated 070 numbers has significant market power (SMP) in the market for 070 call termination on the number ranges they hold. This means that providers who have been allocated these number ranges can set the cost of termination independently of the market.

1.14 We have provisionally concluded that the appropriate response to this market power is to set a charge cap on the termination rate for calls to 070 numbers. In setting the level of this cap, we have considered how best to address the competition and consumer concerns that have arisen as a result of the market power.

1.15 In our provisional view, to set a charge cap that would maintain the current approach to cost recovery, (where the entire cost of the 070 service, including call redirection, is recovered through the wholesale charge), would continue to encourage misbehaviour by some market participants, as there would likely remain a substantial level of revenue that could be gained from a call to a 070 number. Accordingly, we have provisionally concluded that the cap should be set at a level that would require costs to be recovered from both the caller and the recipient of the call.

1.16 We have considered options for determining the cap and have provisionally concluded that the most appropriate approach is to align the cap with that for mobile numbers, set by Ofcom, currently circa 0.5ppm.[5]

1.17 We anticipate that, by aligning the 070 termination charge to that of mobile numbers, this will remove the incentive for domestic and international fraud. It should also clear the way for retail telecoms providers to price 070 and mobile calls similarly, which should, in turn, reduce the potential for consumer harm through 'bill shock'. Further, providers may start including 070 numbers in inclusive call packages, together with mobile calls.

1.18 We would also expect that, as companies offering 070 numbers are prompted to start charging call recipients for using these numbers, it is likely that this will encourage a more efficient choice by consumers of personal numbers between using 070 and other options (such as mobile roaming or other forms of mobile contact such as VoIP services). This is

[4] [✂] estimate.
[5] In our mobile call termination market review 2018-21 consultation we have proposed to reduce this charge to 0.493ppm from 1 April 2018, and then again from 1 April 2019 and from 1 April 2020: https://www.ofcom.org.uk/__data/assets/pdf_file/0011/103340/mobile-call-termination-consultation.pdf.

also likely to benefit society by removing a barrier to tracing parties engaging in identity-related fraud.

1.19 We understand that there will be legitimate users of the range that will face transition costs as a result of this change, but we have already observed organisations moving away from the use of 070 without major changes to their business model, and we provisionally consider that the level of consumer harm from this range in its current form justifies imposing such costs.

Consultation and next steps

1.20 We invite comments from stakeholders on the proposals in this document. The consultation runs for twelve weeks and the deadline for responses is 28 February 2018. Annex 1 provides further details of how to respond. We aim to publish our conclusions in 2018.

2. Background to this market review

2.1 On 12 May 2017, Ofcom announced the Call Cost Review[6] to examine the cost of calling 118 and 070 numbers to ensure that people are protected from high prices and unfair practices in relation to the use of those numbers.

2.2 In announcing the Review, with respect to 070, we stated our concern with the cost of calling follow-me, or personal numbers, consumer confusion as to the role and cost of these numbers, and their frequent misuse.

2.3 In this section we:

- set out our approach to 070 numbers in the National Telephone Numbering Plan ("the Numbering Plan");
- summarise the prior statements and decisions of Oftel and Ofcom relating to the 070 number range;
- set out current uses of 070 numbers;
- set out the current problems on the 070 number range; and
- set out approach to the impact assessment and equality impact assessment (EIA).

The Numbering Plan and 070 numbers

2.4 Ofcom is responsible for the administration of the UK's telephone numbers. This is carried out as part of our regulation of the communications sector under the Communications Act 2003 ('the Act').

2.5 Ofcom is required by Section 56 of the Act to publish a Numbering Plan, setting out the telephone numbers available for allocation and any restrictions on how they may be adopted or used. The Numbering Plan is available on our website.[7] It divides numbers into Geographic numbers and Non-Geographic numbers, defined as follows:

- "'Geographic Number' means a Public Network Communications Number:

i) that is Adopted or otherwise used for routing calls to the physical location of the Network Termination Point of the Subscriber to whom the Telephone Number has been assigned; and

ii) the initial digits of which comprise a Geographic Area Code[8] from Appendix A of the Numbering Plan."

- "'Non-Geographic Number' means any Public Communications Network Number other than a Geographic Number."

[6] https://www.ofcom.org.uk/about-ofcom/latest/media/media-releases/2017/telephone-review-value-callers.
[7] Ofcom, The National Telephone Numbering Plan, 5 June 2017, https://www.ofcom.org.uk/__data/assets/pdf_file/0013/102613/national-numbering-plan-june-2017.pdf
[8] A Public Communications Network Number identified with a particular geographic area.

2.6 Geographic numbers are to be found on the 01 and 02 number ranges. Non-Geographic numbers are to be found on other ranges.

2.7 The Numbering Plan reserves the 070 number range for Personal Numbers. It defines:

- Personal Number as "a Non-Geographic Number, from a range of numbers in Part A of the Numbering Plan, assigned to a Subscriber by a Personal Numbering Service Provider and used to provide a Personal Numbering Service."
- Personal Numbering Service as "a service based on number translation that enables an End-User[9] to be called or otherwise contacted at a single Personal Number, and to receive those calls or other communications at almost any Telephone Number, including a Mobile Number."[10]

2.8 In contrast to certain non-geographic number ranges (i.e. 030, 033, 034, and 037), the Numbering Plan does not apply specific tariff principles or maximum prices to the use of 070 numbers. However, with regard to 070 numbers, the Plan notes that "*those Adopting Personal Numbers shall not share with any End-User any revenue obtained from providing a Personal Numbering Service*."

Oftel's and Ofcom's statements and decisions related to the 070 number range

1997 Oftel Statement on the national numbering scheme

2.9 Oftel said it intended to use 07 as the 'find me anywhere' number range, including personal numbering, mobile, and paging services.[11] This responded to the problem of numbers with different charging arrangements being spread across the number range.

2.10 Oftel said that restricting these services to a single number range reflected the similarity between the services and the fact that most personal numbering and mobile services had the same charging arrangements.

2.11 Oftel recognised the wish of personal numbering service providers to retain a separate identity. Therefore, 070 was restricted for personal numbering services. Oftel indicated that it might consider removing the reservation of the 070 range for personal numbering services if it became clear that mobile and personal numbering services were intersubstitutable.

[9] An 'end-user' is the individual or organisation that is the designated owner of a number. In the case of 070 numbers, the end-user controls the destination number to which calls are terminated.
[10] https://www.ofcom.org.uk/__data/assets/pdf_file/0013/102613/national-numbering-plan-june-2017.pdf, page 7.
[11] Oftel, The National Numbering Scheme: Statement, January 1997, http://www.ofcom.org.uk/static/archive/oftel/publications/1995_98/numbering/nnsjan97/numsch97.htm.

Subsequent reviews and statement on personal numbering

1998 Consultation on personal numbering services

2.12 Prompted by a dispute between two telecoms providers, Oftel decided to undertake an analysis of the market for personal numbering services.[12] Within this review, Oftel also considered personal numbering in relation to mobile services and the issue of pricing in relation to service providers.

2.13 While not deciding to modify regulation related to this range, Oftel noted its perception that there was a general lack of awareness about the tariffs associated with personal numbering services and invited suggestions to address this situation.

2001 Statement on restoring trust in personal numbering

2.14 This Statement followed a consultation in response to an increasing number of complaints related to abuses in the 070 number range. Oftel considered that these issues were undermining consumer and industry confidence in legitimate personal numbering services.[13]

2.15 Oftel noted an increasing number of complaints regarding non-personal numbering activities taking place on the 070 number range. In response to this high level of abuse, Oftel:

- banned revenue sharing on the 070 number range; and
- expressed its support for a Code of Practice for Personal Numbering and indicated its willingness to remove the ban on revenue sharing if such a Code of Practice proved effective in preventing the abuse of personal numbering services.,

2007 Statement on raising confidence in telephone numbers

2.16 This review presented how Ofcom would implement the strategic decisions on the way that telephone numbers would be managed.[14]

2.17 With respect to personal numbers, Ofcom amended the Numbering Plan so that calls to personal numbers would be subject to an obligation to include a pre-call announcement stating the maximum price paid to call personal numbers by customers of the retail telecoms provider on whose network the call was being originated. This obligation was put in place for all calls to personal numbers that exceeded 20ppm (pence per minute) or 20p per call.

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[12] Oftel, Consultation on Personal Numbering Services, March 1998, http://www.ofcom.org.uk/static/archive/oftel/publications/1995_98/fair_trading/pnum398.htm.
[13] Restoring trust in Personal Numbering: A statement issued by the Director General of Telecommunications on proposals to stop abuse of the 070 range, 31 October 2001, http://www.ofcom.org.uk/static/archive/oftel/publications/numbering/pers1001.htm.
[14] Ofcom, Statement on raising confidence in telephone numbers: amending General Condition 17, http://stakeholders.ofcom.org.uk/binaries/consultations/numbering03/statement/gc17statement.pdf.

2007 Removal of the requirement for pre-call announcements on 070 numbers

2.18 The pre-call announcement obligation was withdrawn for 070 services in December 2007, following complaints that use of the pre-call announcement had caused automated calling services to fail because of the dialling delay. It was considered that the failure of hospital and burglar alarms endangered the life and security of people who depend on the reliability of such services.[15]

2009 Review of the 070 personal numbering range

2.19 In this review, Ofcom responded to continuing concerns about the 070 number range. These concerns included a relatively high level of complaints on the 070 number range given call volumes. They also included the fact that scamming activity was continuing on the range, although we noted that levels of such activity were no longer sufficiently high to consider closing the number range.

2.20 However, we did note that the number of complaints about 070 numbers had fallen since the Statement on safeguarding the future of numbers in 2006. We attributed this to PhonepayPlus starting to take enforcement action in this area.[16]

2.21 It was not clear that current consumer detriment would be significantly reduced by migration of personal numbering services to another range. Confusion and scamming activity would persist on any new range to which personal numbering services migrated. We also noted that an assessment of the costs associated with migration indicated that these would heavily outweigh any benefits from reduced consumer detriment.

2.22 We decided to impose a number of other measures that we considered more appropriate:

- to support and monitor PhonepayPlus' monitoring program;
- to require retail telecoms providers to publish their calls to 070 numbers more prominently and make them easier to understand; and
- to provide new guidance to ensure personal numbering service providers carried out due diligence of sub-allocatees to ensure that the latter complied with General Condition 17 (GC17) and the Numbering Plan.

2009 Guidance on the acceptable use of 070 numbers

2.23 In 2009, Ofcom published Guidance on the acceptable use of 070 numbers. In addition to follow-me services, the Guidance gave three further examples of acceptable uses for 070 numbers:

- 070 numbers allocated to users of Internet chat rooms who want to talk to new acquaintances without divulging their real phone numbers;

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[15] Ofcom, Removal of the requirement for pre-call announcements on 070 numbers, 17 December 2007, http://stakeholders.ofcom.org.uk/consultations/numbering03/070precall/.
[16] Ofcom, Statement on the review of the 070 Personal Numbering Range, 27 February 2009, http://stakeholders.ofcom.org.uk/binaries/consultations/070options/statement/statement.pdf.

- 070 numbers allocated solely for the purpose of selling, e.g. a number given in a classified advertisement; and
- 070 numbers allocated to hospital patients so that they can have their own number for the duration of their stay (but not where a generic 070 number is used that requires further PINs).[17]

2.24 Ofcom's Guidance specifies the due diligence process that we expect 070 allocatees to follow before sub-allocating 070 numbers. It also specifies the criteria that Ofcom will use to assess whether a use of a 070 number falls within the definition of Personal Numbering Service in the Numbering Plan. These are:

- the Personal Numbering Service benefits the person being called;
- the End-user must be in charge of the destination number;
- promotional material must reflect the key characteristics of a Personal Numbering service; and
- the use of 070 numbers for administration of individuals' Personal Numbers may not constitute a Personal Numbering Service in itself.

2013 Statement on simplifying non-geographic numbers

2.25 This Statement was a response to evidence that suggested that, due to the way the market was functioning, when it came to non-geographic numbers, consumers in general had poor awareness of prices and were deterred from using non-geographic numbers and that availability of these numbers was undermined. Since Ofcom's analysis indicated that the market was not working well for consumers or those being called, we considered it necessary to intervene.[18]

2.26 However, when it came to personal numbers, in this statement Ofcom said that, following responses to our 2010 consultation on non-geographic numbers, we were of the view that the issues relating to the 'non-standard' (070 and 076) number range were substantially different from those relating to those of other non-geographic numbers. This was because of the confusion of 070 numbers with standard 07 mobile numbers as well as the occurrence of fraud on the range.

2.27 We said that issues arising with regard to 070 numbers required a different regulatory response than other non-geographic ranges, and signalled our intention to treat 070 numbers separately and our intention to consult in due course.

[17] Ofcom, Personal Numbering – Guidance on the acceptable use of 070 numbers, 27 February 2009, http://stakeholders.ofcom.org.uk/telecoms/numbering/guidance-tele-no/070-guidance.
[18] Ofcom, Simplifying non-geographic numbers: Final statement on the unbundled tariff and making the 080 and 116 ranges free-to-caller, 12 December 2013, http://stakeholders.ofcom.org.uk/binaries/consultations/simplifying-non-geo-no/statement/final-statement.pdf.

Current uses of 070 numbers

2.28 From our engagement with stakeholders, we understand that 070 numbers are used for a wide range of legitimate purposes, including:

- Redirection to domestic mobile and fixed lines on an ad hoc basis to simplify contact information given to third parties;
- Redirection to international numbers to reduce roaming costs;
- Used in classified advertisement for temporary contact numbers;
- Used online to allow the user to hide more permanent contact information;
- Used in the provision of temporary telephone lines e.g. in Hospitals; and
- Used in machine to machine contacts e.g. alarms, smart devices.

Current information on call volumes and revenues

2.29 The use of these numbers remains significant if reducing. We estimate that in 2016 approximately 17 million calls were made to 070 numbers (39 million minutes).[19] Based on these volumes, we estimate the associated total revenue from termination rates to be approximately £9 million, though the cost to consumers may be significantly higher once retail mark-up is included. However, as we discuss below, we consider that the volume of calls and associated revenue is in a large part attributable to fraudulent calls and other activities not consistent with the Numbering Plan.

Current wholesale and retail prices and costs

2.30 Termination rates for 070 numbers are charged largely on a pence per minute (ppm) basis and are generally relatively high due to the fact that when the range was initially introduced, mobile termination rates (MTRs) were similarly high.

2.31 MTRs have reduced over time, the costs of onward routing have also reduced, but the termination rates of 070 have remained high. This leads to a considerable profit margin on the provision of 070 termination services.

2.32 Termination rates for calls to 070 numbers originating in the UK range between approximately 0.027ppm and 38.37ppm for a day rate, though around 95% of the traffic is on the pn2 rate (38.37ppm).[20]

2.33 In response to the high termination rates, retail charges can be as high as £2.50 per minute but are generally in the 35-75ppm range (see Annex 8). However, they are never included in inclusive call bundles which, for many consumers, is the basis on which most of their calls are made.

[19] Based on data provided by [✂] and [✂] in response to an s.135 request of the 070 market review.
[20] Based on data provided by [✂] in response to an s.135 request of the 070 market review.

Current problems on the 070 number range

2.34 As can be seen from Ofcom's previous considerations of the 070 range described above, concerns over their use have been present for some time and we have attempted a number of regulatory responses to address them. However, it is clear that despite previous attempts, significant problems remain.

2.35 As we set out in the following sections, high termination rates and related high retail prices have led to poor outcomes for consumers. These include:

- **Excessive prices**: High call termination rates discourage telecoms providers from including these calls in inclusive call bundles and encourage excessive retail prices.
- **Bill shock**: In light of high retail prices, callers' confusion between 070 numbers and mobile numbers leads to unexpectedly high bills;
- **Distorted choices between 070 and alternatives**: As calls to 070 numbers are generally free to call recipients, they do not face the true cost of their choice and so usage of 070 numbers may therefore be higher than is socially desirable when compared to the alternatives, such as mobile services;
- **Service provider fraud**: For example, missed call scams, where the consumer may return a call to a 070 number as they mistake it for a mobile number, or the promotion of fake job advertisements with a 070 contact number;
- **International artificial traffic inflation**: Where UK operators contrive to promote traffic to their numbers in situations where the cost of making the call is lower than the payment to the UK operator due to the fact that non-UK telecoms providers have not identified 070 as being different from a UK mobile; and
- **Identity-related fraud**: Because service providers are not usually recovering the cost of termination from the call recipient (i.e. their own customers), they do not need to have details of the recipients' true identity or establish payment links, which means that 070 numbers can be potentially used for criminal activity where a recipient's true identity is concealed.[21]

2.36 Based on discussions with key stakeholders we consider that there is evidence that up to 60% of all calls are linked to fraud or other behaviour not consistent with the rules governing the range in the Numbering Plan.[22]

2.37 As set out in the following sections of this Consultation, our evidence suggests that each telecoms provider allocated 070 numbers has significant market power (SMP) in the market for 070 call termination on the number ranges they hold. This means that providers who have been allocated these number ranges can set the cost of termination independently of the market.

2.38 Accordingly, given our concerns about the impact of high termination rates on consumers and on incentives for misbehaviour and our view that the setting of these termination

[21] In addition, we consider that evidence suggests that misuse of the 070 range has in the past undermined the use of these numbers for innovative delivery of electronic communications services.
[22] [✂] estimate.

rates arises from the market power of range holders, we go on to consider what response to this market power should be put in place that best addresses the competition concern and resultant consumer welfare issues.

Legal Framework

2.39 The applicable regulatory framework has its basis in five EU Communications Directives each of which has been implemented into national legislation. It includes provision for the carrying out of market reviews by national regulatory authorities, such as Ofcom. The Communications Act 2003 also sets out our duties when performing our functions, including our principal duty to further the interests of citizens in relation to communications matters and the interests of consumers in relevant markets, where appropriate by promoting competition. We set out the regulatory framework and the market review process, which we have applied in putting together the proposals set out in this Consultation, in Section 3 and in Annex 6.

Impact assessment

2.40 The analysis presented in this consultation constitutes an impact assessment, as defined in section 7 of the Act. Impact assessments provide a valuable way of assessing different options for regulation and showing why the preferred option was chosen. They form part of best practice policy-making. This is reflected in section 7 of the Act, which sets out that Ofcom has to carry out impact assessments where the remedies we impose would be likely to have a significant effect on businesses or the general public, or when there is a major change in Ofcom's activities. However, as a matter of policy, Ofcom is committed to carrying out impact assessments in relation to the great majority of our policy decisions. For further information about our approach to impact assessments, please see our guidelines.

Equality impact assessment (EIA)

2.41 Ofcom is required by statute to assess the potential impact of all our functions, policies, projects, and practices on the following equality groups: age, disability, gender, gender reassignment, pregnancy and maternity, race, religion or belief and sexual orientation. EIAs also assist us in making sure that we are meeting our principle duty of furthering the interests of citizens and consumers regardless of their background or identity.

2.42 We have no evidence that 070 numbers are disproportionately called or used by any of the identified equality groups in Great Britain or Northern Ireland. On this basis we have provisionally concluded that we do not expect any of the equality groups to be negatively affected to a material extent by our proposals. We have not carried out separate EIAs in relation to the additional equality groups in Northern Ireland: religious belief, political opinion and dependants. This is because we anticipate that our proposals will not have a differential impact in Northern Ireland compared to consumers in general. We welcome any stakeholder views on this assessment.

Structure of this consultation

2.43 In this consultation we begin by setting out our assessment of market definition and SMP in relation to the provision of wholesale call termination services for voice calls to 070 numbers (Section 3). We then set out our proposals for remedying the competition and consumer harms we have identified (Section 4), with the draft legal instruments that would give effect to those proposed remedies in Annex 5. In addition, throughout this document we rely on information presented in Annexes 8 and 9.

3. Market definition and SMP assessment

Introduction

3.1 In this section we set out our assessment of market definition and significant market power (SMP) in relation to the provision of wholesale call termination services for voice calls to 070 numbers (hereafter: '070 WCT').

3.2 We propose the following market definition:

> "wholesale termination services that are provided by [named terminating communications provider] (TCP) to another communications provider, for the termination of voice calls to 070 numbers within the range which has been allocated to that TCP by Ofcom, for which that TCP is able to set the termination rate."

3.3 With regard to market power, we propose that each TCP has SMP within the relevant 070 WCT market applicable to that TCP.[23] Annex 5 lists the TCPs we propose to determine as having SMP in the provision of 070 WCT within the number ranges allocated to them by Ofcom. We set out the remedies that we propose to address competition concerns stemming from SMP in the provision of 070 WCT in Section 4.

3.4 We discuss the regulatory background, including the legal framework and our analytical approach to market definition, before setting out our reasoning in relation to:

- our key concerns;
- market definition;
- assessment of SMP; and
- application of the three-criteria test.

Regulatory and Analytical Framework

3.5 This sub-section:

- summarises the relevant legal framework, including the account we must take of relevant European Commission (EC) Guidelines and Recommendations;
- considers the three-criteria test for applying *ex ante* regulation to markets that are not included in the list of markets susceptible to *ex ante* regulation in the '2014 EC Recommendation' on the relevant markets;[24] and

[23] The relevant market involves the provision of wholesale call termination for voice calls to 070 numbers within the range allocated to each TCP.

[24] European Commission (EC) Recommendation of 9 October 2014 on relevant product and service markets within the electronic communications sector susceptible to ex-ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communication networks and services (2014/710/EU), which replaces the corresponding Commission Recommendation of 17 December 2007 (2007/879/EC), http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014H0710&from=EN

- in light of the legal framework, outlines the basic principles of our overall approach to market definition.

3.6 The legal framework for our market definition requires that, before making a market power determination, we identify the markets that, in our opinion, are appropriate in the circumstances applying to the UK. Ofcom must undertake market definitions in accordance with competition law principles[25] and must take "utmost account" of the 2014 EC Recommendation and the SMP Guidelines.[26]

3.7 The EC's Framework requires that we conduct our assessment using a 'modified Greenfield approach'.[27] This involves assessing market power in the relevant market in a hypothetical scenario in which there is an absence of any current or potential regulation in the market being assessed and in markets downstream of it that depend, or would depend, on a finding of SMP in that market. However, we still take into account any regulation which is independent of an SMP finding in the market concerned and any regulation that will continue to exist throughout the period assessed in this review.

3.8 The analysis also needs to be forward-looking. Therefore, we evaluate the expected and foreseeable technological and economic developments likely to affect the candidate market(s). Where relevant, we have regard to the revised working paper on SMP published by the European Regulators Group (now: BEREC) in 2005 ('the ERG SMP Position').[28] In the relevant sub-sections below we set out how we have taken the ERG SMP Position into account in reaching our proposals.

The three-criteria test

3.9 The 2014 EC Recommendation identifies those service markets which, at the European level, the European Commission has identified as being susceptible to *ex ante* regulation. These markets are identified on the basis of the cumulative application of the following three criteria (known as the "three-criteria test"):

- the presence of high and non-transitory structural, legal or regulatory barriers to entry;
- a market structure which does not tend towards effective competition within the relevant time horizon, having regard to the state of infrastructure-based and other competition behind the barriers to entry; and
- competition law alone is insufficient to adequately address the identified market failure(s).

[25] Section 79(1) of the Act; Article 15(3) of the Framework Directive.
[26] Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services (2002/C 165/03), 11 July 2002 ('the SMP Guidelines'). Available at:
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2002:165:0006:0031:EN:PDF
[27] See the Explanatory Note to the 2014 EC Recommendation.
[28] ERG, Revised working paper on the SMP concept for the new regulatory framework, September 2005. Available at:
http://berec.europa.eu/doc/publications/public_hearing_concept_smp/erg_03_09rev3_smp_common_concept.pdf

3.10 The 070 WCT market is not a market specifically listed by the European Commission in the 2014 EC Recommendation. However, the Recommendation recognises that there may be other markets, aside from those specifically identified, in which it is appropriate to impose *ex ante* regulatory obligations according to national circumstances.[29] The 2014 EC Recommendation states:

> "National regulatory authorities may identify other markets than those listed in this Recommendation and apply the three-criteria test".[30]

3.11 We present the assessment that underlies our proposal that the 070 WCT market meets the three-criteria test at the end of our sub-section on market definition.

3.12 Although the 070 WCT market is not listed in the Annex to the 2014 EC Recommendation, Ofcom has identified it as a market in which, in the context of the UK, *ex ante* regulation may be warranted. We have based our analysis on projections over a five-year period, taking account of anticipated longer-term developments of relevance to the provision of 070 WCT (and of downstream retail 070 services).

Our approach to market definition

3.13 There are two main aspects of market definition: 'product' and 'geographic'. In describing our approach to market definition, we focus on product market definition as this is where the key issues in relation to market definition in this review arise.

3.14 Product market definition begins with consideration of the narrowest relevant identifiable set of products, termed the candidate market. We then consider whether a price rise of 5-10% above the competitive level undertaken by a hypothetical monopolist of this candidate market would be profitable. This is known as the "Small but Significant Non-Transitory Increase in Price" (SSNIP) test.

3.15 There are two sources of competitive constraint that could render a SSNIP unprofitable:

- **demand-side substitution** where consumers switch to other products in response to the SSNIP, or;
- **supply-side substitution** where suppliers of other products respond to the SSNIP by starting to provide products in competition with those in the candidate market.

3.16 If either form of substitution would render a SSNIP unprofitable, then the relevant market is likely wider than the initial candidate market. The test is then repeated including the next best substitute product in the new candidate market and a SSNIP is applied to this new market. If the SSNIP is found to be profitable, the set of products defining that candidate market then becomes the relevant product market.

3.17 While it is often difficult to directly apply a SSNIP in practice, we consider that the SSNIP test provides a useful conceptual framework. Hence, we propose to use this framework as our guiding conceptual approach to define the product market.

[29] See Recital 5 of the 2014 EC Recommendation.
[30] See Recital 21 of the 2014 EC Recommendation.

3.18 In many cases, the set of products defined at the end of the SSNIP test constitutes the relevant product market. However, in some cases it may be appropriate to aggregate several sets of products defined by the SSNIP test because they are subject to similar competitive conditions or a common pricing constraint. Because of these factors it is common, in the case of call termination markets, to define all numbers to which a TCP offers termination as a single market.

3.19 The 2014 EC Recommendation identifies the starting point for the overall assessment of wholesale product markets to be the definition of the relevant retail markets.[31] This is because wholesale demand is derived from demand for retail services.

3.20 It is also necessary to define the geographic dimension of a market. In principle, geographic markets can also be defined using a SSNIP test to assess whether buyers of a service in one location would respond to a SSNIP in that location by switching their purchases to another location where prices had not gone up. However, as users of telecoms services are generally unlikely to change their location in response to a SSNIP, a SSNIP test will often produce impractically small geographic markets. Hence, consistent with the BEREC Common Position, distinct geographic areas are to be included in the same relevant market if one of the following conditions are met: firstly, if competitive conditions in these areas are sufficiently similar, and secondly, if a common pricing constraint applies to them, for example because prices are uniform across the areas concerned.[32]

Discussion of our key concerns

3.21 Before defining the market, it is useful to set out the issues relating to provision of 070 services that we are concerned about. Market definition is a means to an end – we seek to address the competition concerns that we identify (by means of imposing remedies), and market definition is an exercise intended to support this objective. As such, the market definition in any particular case depends on the issues at hand, and should take account of the concerns that we seek to address.

3.22 In the case of 070 markets, our key concerns – which are supported by the evidence set out in Annex 8 – relate to the wholesale level. We note that some of the evidence we are relying on, particularly that related to consumer understanding, is now a few years old. In our view, there has however been no material change to the market since this evidence was collected, and as such we consider it remains relevant evidence for us to take into account.

3.23 We consider that market power in the termination of calls to 070 numbers leads to high 070 WCT rates which, in turn, lead to:

[31] See Recital 7 of the 2014 EC Recommendation.
[32] BEREC Common Position on geographical aspects of market analysis (definition and remedies), 2014. Available at: http://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/common_approaches_positions/4439-berec-common-position-on-geographic-aspects-of-market-analysis-definition-and-remedies

- **distortion to consumer choice arising from high retail prices**: Originating retail telecoms providers set high charges for calls to 070 numbers. Prices which are high in relation to cost distort consumers' choices, even where consumers are fully aware of the price they are being charged.[33] The distortion arises as consumers are deterred from calling 070 numbers even though they value them more than the (marginal or incremental) cost. This suggests that absent other factors, there are likely to be fewer calls to 070 numbers than is socially efficient (given the end-user's decision to take a 070 number).
- **distortion to consumer choice arising from consumer confusion between 070 and 07x mobile numbers**: consumers are generally unable to distinguish 070 from 07x mobile numbers, and tend to be unaware that 070 calls attract much higher charges than calls to 07x mobile numbers (discussed at paragraphs 3.37-3.40 below). This is likely to lead to consumers making more and longer calls to such numbers than they would do if they were aware of the charges they incur when calling 070 numbers;
- **bill shock:** consumers are susceptible to "bill shock" (higher than expected charges) when they call 070 numbers because they believe retail 070 call charges to be similar to those for calling 07x mobile numbers (which are often included as part of a bundle) when in fact they are much higher;[34]
- **vulnerability to fraud and scams:** evidence (discussed at paragraphs 4.13 – 4.20 and A8.31-A8.56) confirms that there is substantial improper use of 070 numbers, with consumers misled into making 070 calls which incur high retail charges (their retail telecoms providers then have to pay high 070 WCT rates).[35] Fraudsters (often operating abroad) can also use 070 numbers to make it more difficult to be traced; and
- **poor reputation:** evidence (discussed at paragraphs 4.21-4.22 and A8.57-A8.60) suggests that misuse of the 070 range has in the past undermined the use of these numbers for innovative delivery of electronic communications services.

3.24 The way 070 TCPs compete to acquire 070 end-users can give rise to distortions that are sustained over time:

- **inefficient choices**: 070 TCPs often make 070 numbers available free to the end-user and recover all the costs from termination charges, borne by callers. This means the choices that 070 end-users make when deciding to take a 070 service rather than an alternative may not be efficient as they do not face the true costs of their decision; and

[33] Evidence, as presented in Annex 8, shows that both fixed and mobile OCPs set 070 call charges that are significantly greater than the rates they pay to TCPs for terminating these 070 calls.
[34] For example, paragraphs A8.16-A8.17 discuss cases where bill shock has occurred.
[35] For example, artificial inflation of traffic (AIT) occurs where a party running or associated with running a telecoms service is associated with activity causing calls to that service to be artificially generated or prolonged for financial benefit, in cases where the calling pattern would not have happened in the normal course of business.

- **"gold-plating":** the high profit margins on 070 termination give TCPs an incentive to incur high costs in order to acquire 070 end-users. This can mean that 070 TCPs offer services/functionalities free to end-users, even though the costs of these may exceed the value that end-users derive from these services/functionalities.[36]

3.25 As our concerns relate predominantly to the wholesale level, our focus in this review is to assess whether it is appropriate to impose remedies at this level. We expect reductions in 070 termination rates (achieved by the remedies we propose in Section 4) to be passed on in the 070 call charges that retail telecoms providers set. We would expect retail telecoms providers to treat the pricing of these calls in the same way as they do with respect to mobile calls, given the effect of retail competition and the concern that retail telecoms providers are likely to have regarding the transparency of pricing for their customers. To the extent that reductions in 070 termination rates are not, or are only partially, passed on in lower 070 call charges, we are prepared to act to protect consumers.[37]

Starting point for market definition

3.26 As we recognise that wholesale demand is derived from retail demand (and in line with the 2014 EC Recommendation), we begin by considering whether substitution by retail customers provides an indirect constraint on wholesale charges. Thereafter, we consider any direct constraints reflecting substitution at the wholesale level.

3.27 Our starting point at the retail level is voice calls to 070 numbers, to which 070 WCT is an essential input. Our focal product at the wholesale level is termination on each 070 number which is active or could become active over the next five years, and irrespective of the type of network that originated the call (fixed, mobile or VoIP) and of the service the 070 number is used to provide.

3.28 We first consider the scope for demand-side substitution in response to a SSNIP in the WCT charge for calls to an individual 070 number. Any increase in the price of the wholesale product in question is likely to be passed on, at least in part, to the retail level. The resulting increase in retail prices may in turn prompt a sufficient number of retail customers to switch to substitute products (or may lead suppliers of other products to start offering competing retail products) to render the wholesale price increase unprofitable. Such constraints on wholesale prices arising from switching at the retail level are referred to as indirect constraints.

3.29 We also consider that supply-side substitution or entry into the provision of 070 services (by acquiring an allocation of 070 numbers) would not be sufficient to constrain a SSNIP on the WCT for calls to a specific 070 number. This is because calls to different 070 numbers

[36] For example, Telecom2 provide free Voicemail, Fax-to-Email and other services as part of a 070 number package. Accessed at: https://www.telecom2.net/numbers/search/70#info [Accessed on: 08 November 2017].
[37] For example, if the degree of consumer harm stemming from 070 WCT rates remains material, we may consider using our consumer protection powers to set maximum charges for calls to 070.

are not substitutes for each other. Moreover, as explained below, competition between 070 TCPs to attract and retain end-users is unlikely to constrain 070 WCT.

3.30 For completeness, we also consider the response of end-users to a wholesale SSNIP in those situations where the called party is likely to take account of the impact of increased termination charges on callers.

Retail services (indirect constraints)

3.31 We assess the potential for demand-side substitution by considering whether a hypothetical monopolist supplier could impose a SSNIP above the competitive level without losing sales to such a degree as to make this price rise unprofitable. For the purposes of this analysis, we assume that the SSNIP at the wholesale level is passed on to the retail level.[38]

3.32 Consumers' sensitivity to 070 call charges depends on their ability to understand the number range and associated charges, as well as their ability to detect increases in the call charges. We consider below, evidence related to:

- Consumers' awareness of 070 call charges;
- Consumers' ability to distinguish between 070 and 07x mobile numbers;

3.33 We also discuss:

- Potential retail substitutes; and
- Constraint arising from end-users' ability to respond to a wholesale SSNIP.

Consumers' awareness of 070 call charges

3.34 Survey evidence suggests that consumers have low awareness of 070 call charges and may expect them to be similar to those for calls to 07x mobile numbers (which consumers know to be low or to be part of their bundle). Awareness of charges is a necessary condition for a demand-side response to a SSNIP.

3.35 Following our 2012 consultation on Simplifying Non-Geographic Numbers we collected evidence which suggests that consumers have low awareness of the charges that calls to 070 numbers attract:

- When asked to estimate the price of calls to 070 numbers, most consumers said they did not know the price (around six in ten of all people with a telephone and just under four in ten of those who said they were aware of 070/07 numbers).[39]

[38] A necessary condition for the SSNIP to be unprofitable is that at least some of the SSNIP be passed on to final consumers, who may then switch away. Full pass-through is a conservative assumption in the sense that, as it tends to widen the scope of the market, a finding that a narrow market definition is appropriate even with full pass through is robust.
[39] 2012, Ofcom. *Non-geographic telephone numbers Omnibus Survey*, page 3. Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0026/44891/omnibus-survey2012.pdf

- Eighteen per cent of telephone users thought that the cost of calling 070 and mobile numbers was the same and a further 4% thought that calling 070 numbers would be less expensive.[40]

3.36 As part of the 2014 consultation on the Mobile Call Termination review, we also collected evidence which suggests that consumers have low awareness of the charges that calls to 070 numbers attract. Kantar Media surveyed consumers' awareness of call charge differentials across the 07x number range and asked questions aimed at testing consumers' awareness of (potential) differences between 070 and other 07x number call charges:[41]

- only 42% of respondents thought that not all 07x calls cost the same; 37% that all 07x calls cost the same; and 22% did not know; [42] and
- of the 42% of respondents that thought that not all 07x calls cost the same, only 30% (13% of total) thought that 070 call charges differ from charges of calls to other 07x services.[43]

3.37 This survey evidence suggests that most consumers are not aware of the differentials in call charges between 070 and 07x mobile numbers. While in principle consumers may learn about 070 call charges over time (as a result of incurring higher than expected charges for calls to 070 numbers), the infrequent nature of calls to 070 numbers means that in practice most callers will have no (or only limited) opportunity to do so. Moreover, even when making calls to 070 numbers consumers would only learn about the charges that such calls attract when reviewing their (monthly) bills on a by-item basis (which many consumers do not do).

Consumers' ability to distinguish 070 from 07x mobile numbers

3.38 Survey evidence also suggests that consumers are unlikely to be able to distinguish between 070 and 07x mobile numbers. If consumers believe they are calling a mobile number instead of a 070 number, this may make them less likely to respond to a SSNIP on the price of 070 call charges.

3.39 Following our 2012 consultation on Simplifying Non-Geographic Numbers, we also collected evidence regarding consumers' awareness of various non-geographic number ranges. The evidence suggests that: [44]

- In 2012, only 21% of adults with telephones were aware of 070 numbers.

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[40] *Non-geographic telephone numbers Omnibus Survey*, page 14.
[41] Ofcom, 2014. *Mobile call termination market review 2015-18*, Annex 18. Available at: http://stakeholders.ofcom.org.uk/binaries/consultations/mobile-call-termination-14/annexes/Annex_18_Consumer_survey.pdf
[42] Q15A (When making calls to numbers starting with 07 and followed by other digits, do you think that all calls will cost the same?) and Q15B (Which of the following types of calls do you think have different rates?).
[43] Q15B (Which of the following types of calls do you think have different rates?).
[44] While we recognise that this evidence is a number of years old, we expect the evidence, and the inferences made on the back of this evidence to remain valid. In particular, no measures have been taken which would increase awareness of 070 numbers.

- Of this 21%, 59% thought that 070 numbers were in the mobile telephone range.
- Overall, less than 1% of people with telephones were directly aware of and correctly understood what type of number range 070 was.[45]

3.40 On the basis of the survey evidence described above, our provisional view is that consumers are unlikely to distinguish 070 from mobile 07x numbers. Consumers' greater familiarity with 07x mobile numbers also makes it likely that they regard charges for calls to 070 numbers as similar to those for calls to mobile 07x numbers. This suggests that consumers may expect calls to 070 numbers to be included in their mobile bundles (like mobile calls) or that the charges would involve very low rates.

Implications for consumers' sensitivity to 070 call charges

3.41 The above evidence on consumers' limited ability to distinguish 070 numbers from 07x mobile numbers, and their low awareness of 070 call charges, suggests that the large majority of (potential) callers to 070 numbers are unlikely to be sensitive to changes in 070 call charges. Consumers' limited price sensitivity has significant implications for our assessment of the constraint that substitution at the retail-level (involving callers using alternatives to 070 calls) exerts on 070 WCT. Our assessment below takes this into account.

Consumers' ability to respond to increased 070 call charges

3.42 Under the UK's Calling Party Pays (CPP) arrangement, retail telecoms providers bear the charges for terminating 070 calls (which they can recover through their retail call charges). In the context of 070 WCT, this means that indirect constraints are likely to be ineffective as those calling the numbers are unlikely to have the ability to respond to a wholesale SSNIP (even when there is full pass-through of 070 WCT to the retail level):

- A caller who wants to speak to a particular person has to call his or her number;
- The CPP arrangement means that, while callers pay for termination of 070 calls, end-users select the TCP that controls the termination charge.

Potential retail substitutes

3.43 We now consider four potential retail substitutes to 070 calls:

- direct calls to end-users on numbers in a range other than 070 (e.g. mobile or geographic numbers);
- calls using over-the-top (OTT) services;
- text-based services; and
- call-back arrangements.

Direct calls to end-users on numbers in a range other than 070

3.44 Callers have, in principle, an alternative means to contact an end-user: they can call the number to which the 070 call is forwarded. This may be a UK geographic or mobile

[45] Ofcom, 2012. *Non-geographic telephone numbers Omnibus Survey*, pages 2-3.

number, or alternatively an international fixed or mobile number. However, this alternative will only be usable if the caller knows the number to which the 070 call is forwarded (i.e. the alternative number). In most cases, the caller is likely to know only the 070 number because end-users take the 070 number in order to avoid providing the underlying number.[46]

Calls using over-the-top (OTT) services

3.45 Another potential substitute for 070 calls may be the use of OTT voice call services such as Skype, FaceTime or Viber. Where these services can be accessed from any location, e.g. by a smartphone using mobile broadband, they (like 070 calls) support voice calls and allow callers to contact end-users without the latter being tied to a particular phone or SIM.

3.46 The use of OTT (voice call) services has expanded materially over recent years,[47] in part supported by the growing ownership of smartphones which provide access to use such services.[48] These developments suggest that there could be an increasing potential for OTT services to be used for voice calls, and this may make such services an increasingly practical alternative to 070 calls.

3.47 However, we do not consider OTT services will be a sufficiently strong substitute to 070 calls over the next five years because:

- not all end-users will be able to access these services. They may not have the required device (tablet or smartphone) and/or the broadband connection needed may be unavailable, costly or insufficiently stable;
- the caller and end-user need to arrange to use an OTT service in advance, and to exchange contact details and this may require an initial call to the 070 number in any case;
- not all OTT services are compatible with each other. A caller and end-user may find they use incompatible OTT services; and
- when relying on mobile broadband, both caller and end-user need to be willing to use data from their data allowance or to pay extra for data for an OTT call.[49]

[46] This may be for a number of reasons, for example, to avoid roaming charges, to benefit from the "follow-me" functionality (which we note is the key use of 070 services) or to preserve the confidentiality of their alternative number.
[47] Data from several providers of unmanaged VoIP show those volumes growing at an annualized rate of 40% per year. Source: Ofcom, 2017. *Narrowband Market Review: Draft Statement,* page 79. Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0013/107320/nmr-draft-statement.pdf
[48] Ownership of smartphones increased by 15% between 2015 (66%) and 2017 (76%) (Source: Ofcom, 2015. Communications Markets Report, page 1. Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0022/20668/cmr_uk_2015.pdf and Ofcom, 2017. Communications Markets Report, page 6. Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0017/105074/cmr-2017-uk.pdf). In addition, 42% of internet users in 2017 regard their smartphone as the most important device for going online (an increase of 33% from 2015) (Source: Ofcom, 2017. Technology Tracker H1.and Ofcom, 2015. Technology Tracker H1.)
[49] By extension, this also means that end-users may prefer to avoid data charges or the use of OTT voice call services eating into their data allowance.

Text-based services

3.48 Non-voice forms of communication (e.g. instant messaging, email or social media), that are widely used by UK consumers may, in some cases, offer an alternative to voice calls to 070 numbers. When a broadband connection is available, these forms of communication can be used at no or very low costs to the caller and end-user. We refer to these forms of communication as text-based services to distinguish them from voice calls using OTT services above.

3.49 However, we do not consider text-based services to be a sufficiently material substitute to voice calls to 070 numbers because:

- these services provide a qualitatively different type of communication: communication is often not in real-time; callers and end-users may not be able to check that the message was received in the same way as they can with a voice call, and people tend to perceive benefits to a conversation that are not available from text-based services (such as flow of conversation and establishing rapport and interaction);
- the end-user may be unwilling to provide an alternative number to text, for example, where confidentiality is required; and
- these services may not be available where the caller and end-user belong to different "closed user groups" services (e.g. instant message applications or social media platforms).

3.50 As patterns of communication change and smartphone ownership grows, text-based services may become available to a wider set of consumers. However, this does not mean that switching from 070 voice calls to text-based communication in response to a change in relative prices (which is relevant for assessing substitution in the context of market definition), will become significant. For the reasons explained above, we consider that text-based services are unlikely to exert a material constraint on 070 voice calls over the next five years.

Call-back arrangements

3.51 A further potential substitute could involve short calls to the end-user's 070 number for caller and end-user to agree on and exchange details needed for another method of communication followed by the end-user initiating a new call using that new method (i.e. call-back arrangements).[50]

3.52 We do not consider this option a close substitute for 070 voice calls because, as discussed above, end-users often take a 070 number specifically in order to avoid costs to themselves, with little or no concern for the cost to callers. This would be inconsistent with the rationale for use of call-back arrangements.

[50] Alternatively, caller and end-user could agree on the caller initiating a new call to a mobile or fixed number held by the end-user. This option is discussed as part of the alternative of calling the number to which 070 calls are routed (see above).

3.53 Call-back arrangements are likely to be restricted to cases where the caller is a family member or friend of the end-user as they require close coordination and the end-user bears the cost of calls. Furthermore, such arrangements would typically require an initial call to the 070 number to be made.

3.54 Evidence gathered for the 2014 Consultation on the Mobile Call Termination Market Review suggests that call-back arrangements are not widely used as a substitute for calls to mobile numbers.[51] In a similar vein, we would not expect call-back arrangements to be used on a material scale as an alternative to 070 calls, nor would a small increase in the charges for calls to 070 numbers (above the competitive level) be likely to lead to materially greater use of such arrangements.

Response of end-users to a wholesale SSNIP

3.55 It is also relevant to consider whether end-users may have incentives to respond to a wholesale SSNIP on 070 WCT charges in a way that could render that SSNIP unprofitable.[52] However, because the WCT charge is borne by callers, a material response by end-users is unlikely unless they are concerned about the charges that callers incur when calling 070 numbers or about the implications of such charges (e.g. a reduction in the volumes of calls to their 070 numbers).[53] If end-users are not (materially) concerned about charges incurred by callers, they will not have incentives to respond to an increase in 070 call charges passed through from a wholesale SSNIP.

3.56 We recognise that end-users' incentives to respond to a SSNIP may depend on the particular use they make of 070 services:

- **For follow-me services**, incentives are likely to be very low as, in many cases, end-users take up such services to avoid incurring costs to themselves such as roaming charges and thus accept that callers bear the costs of calls;
- **For short-term uses where the end-user does not want to disclose his or her own (mobile or fixed) number** (e.g. sales platform, dating site), use of a 070 number suggests a strong desire for confidentiality and hence suggests that users are unlikely to respond to a SSNIP on the WCT charge. However, end-users may wish to receive as many calls as possible in order to maximise the chances of selling an advertised item on a sales platform, or the number of contacts on dating sites. In these circumstances end-users may oppose a rise in call charges if they anticipate that higher charges would lead to a decline in the number of calls they receive on

[51] Ofcom, 2014. *Mobile call termination market review 2015-18*, Annex 18. Kantar Media's survey explored whether respondents ever used their mobile phone to call someone back to save the caller money. 38% of respondents stated that they had done this, whereas 62% had never done so (Q21). Whilst ad hoc call-back arrangements may be significant for some users, they are not widespread across all users and they are likely most prevalent where the caller is a family member of close friend of the end-user.

[52] After all, end-users decide to take a 070 number and select the TCP that provides them with the 070 number and accompanying services (such as the interface to select the number to which calls to 070 numbers should be forwarded).

[53] More specifically, it requires the end-users' concern to be sufficiently significant for them to be willing switch 070 TCP or to propose a means of communication that avoids callers incurring 070 call charges.

their 070 number. The evidence discussed above, however, suggests that most callers are not price sensitive, not least because they have limited ability to distinguish 070 numbers from 07x mobile numbers and limited awareness of 070 call charges. To the extent that end-users anticipate callers to be insensitive to prices, they are unlikely to materially respond to a wholesale SSNIP as they do not expect higher call charges to lead to them receiving fewer calls. For this reason, we focus on callers' response to a SSNIP; and

- **For hospital bedside telephony** (offered by Hospedia and Premier Telesolutions[54]) end-users are more likely to care about the charges that callers, often family member or close friends, incur when calling their 070 numbers. It appears reasonable to consider that end-users (to the limited extent they are likely to be aware of call charges) will have some regard to the charges incurred by those calling them. However, in the hospital environment, there may be restrictions on the use of alternative calling methods such as mobile phones which may not be permitted in all areas of a hospital.[55]

Provisional conclusions on retail services

3.57 We propose to conclude that demand-side substitution at the retail level is unlikely to materially constrain the price of 070 WCT. This means that we do not believe there are any effective indirect constraints from the retail level on the wholesale market.

Wholesale product market

3.58 Constraints that arise from substitution at the wholesale level are referred to as direct constraints:

- Demand-side substitution at the wholesale level could constrain 070 termination charges if retail telecoms providers were able to switch to an alternative termination service in response to a SSNIP on the 070 termination charge.
- Supply-side substitution could be a relevant constraint if a CP other than the current TCP could begin to terminate calls to a given 070 number in response to a SSNIP on the WCT charge for that number.

3.59 We propose to conclude that direct constraints support a wholesale market definition of 070 WCT at the level of individual 070 numbers:

- There are no opportunities for demand-side substitution at the wholesale level by the retail telecoms provider because, when a 070 number is called, the retail

[54] Hospedia and Premier Telesolutions are providers of bedside communication and entertainment in UK hospitals. As part of its offering, Hospedia and Premier Telesolutions allocate a 070 number to the fixed phones on the bedsides of its customers bedside tables. Callers to these 070 numbers incur the call charges as set by their OCPs.
[55] The NHS has published guidance on this. See http://www.nhs.uk/chq/Pages/2146.aspx?CategoryID=68&SubCategoryID=162

telecoms provider has no alternative other than to purchase 070 termination on that number.

- Supply-side substitution is also not effective as the only CP that can supply termination to a given 070 number is the TCP to which that number has been allocated.[56] Whilst it may be possible to begin offering 070 termination services relatively easily once an allocation of 070 numbers has been acquired, such entry would not constrain 070 termination charges.[57] Calls to different 070 numbers, belonging to different individuals are not substitutes for each other, and callers would not switch to calling a different 070 number with a lower termination rate in response to a SSNIP on the WCT charge for the number they wanted to call.

Homogeneous competitive conditions and common pricing constraints

3.60 The absence of demand- and supply-side substitution means that a separate market could be defined for the provision of 070 WCT to individual 070 numbers. As this would lead to a very large number of markets, we consider it pragmatic to aggregate the provision of termination on 070 numbers within the range allocated to each TCP in operator-specific markets. This is reasonable because competitive conditions are homogeneous within markets defined in this way – the TCP in question has a monopoly on the termination of calls to the 070 numbers within their range.

3.61 Aggregation of numbers by TCP is a common step in the definition of fixed and mobile termination markets as these numbers tend to be subject to similar competitive conditions or a common pricing constraint.[58] We also consider this to be the case in relation to the provision of 070 WCT.

Two-sided markets

3.62 In the discussion above, we considered whether there were any effective constraints on charges for 070 termination. We found that the absence of such constraints meant that 070 termination on each TCP's number range could be defined as a market in its own right.

3.63 However, 070 TCPs do not only provide 070 termination to callers, they also provide a service to 070 end-users. Viewed in this way, the function of the 070 TCP appears to be to bring callers and 070 end-users together on a "platform". Where a firm brings different groups of customers together on a physical or virtual "platform" in this way, it may be appropriate to treat both groups as part of a single "two-sided" market.[59][60]

[56] In theory, a TCP could allow another CP to terminate 070 voice calls to numbers within the range allocated to the TCP. However, we consider that TCPs would not have an incentive to allow such competition as it would reduce the revenues they could earn from the providing call termination to the numbers within their range.
[57] Indeed, for reasons set out below, competition between TCPs to acquire 070 end-users may tend to increase termination charges as TCPs would seek to recover the costs they incur in attracting and retaining end-users.
[58] See Ofcom, Mobile Call Termination Market Review 2015-18, Final Statement, 17 March 2015, paragraphs 3.90 to 3.94 and 3.123 to 3.125 (available at https://www.ofcom.org.uk/__data/assets/pdf_file/0029/76385/mct_final_statement.pdf
[59] There is more than one definition of a "two-sided market" in the economics literature but most share this feature.
[60] Newspaper advertising is often regarded as an example of a two-sided market including advertisers and readers.

3.64 In the case of termination of calls to certain non-geographic numbers, Ofcom previously concluded that it was appropriate to analyse both sides of the market simultaneously.[61] This conclusion was based on the specific features of these non-geographic calls, which we do not consider relevant to the 070 range for the following reasons:

- The pricing structure of the 070 range (balance of charges between callers and end-users) is not determined by regulation on the termination side. This suggests that the 070 market structure is likely to produce a suboptimal pricing structure.
- Callers to 070 numbers do not benefit from a low or negative price to the end-user as no value-added service is provided in return.[62] Revenue-sharing is prohibited for the 070 range.
- 070 end-users are unlikely to be concerned with the price paid by callers for the reasons set out earlier in this section.

3.65 Charging structures in which one side participates for nothing whilst the other side bears all the costs (or other asymmetric charging structures) are not uncommon in two-sided markets. Such structures may be efficient if it is necessary to have a low or zero charge to one side in order to get them on board, and provided the benefits to the other side are sufficient.[63] This asymmetric charging structure is typically efficient for number ranges with the conditions of the non-geographic calls that were the subject of the 2008 investigation, discussed above.

3.66 The current structure of 070 charges has the characteristics of an asymmetric charging structure in that 070 callers bear all the costs of the 070 service, and end-users typically pay nothing. It is also the case that, in principle, callers may benefit from the "find me anywhere" function of a 070 number for example, or from the dating and small-ad services that the confidentiality of a 070 number facilitates.

3.67 However, callers could generally obtain similar benefits from alternative services.[64] Moreover, in the case of 070 termination, we believe that the charging structure leads to significant harm as the high termination rates lead to high retail prices, bill shock and increased vulnerability to fraud. We are also concerned that competition among 070 providers to win customers might be leading to excessive costs (gold plating). This suggests that the current 070 charging structure is in fact inefficient.[65]

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[61] Ofcom, 2008. *Determination regarding complaint from Energis Communications Ltd about BTs charges for NTS call termination*, paragraph 4.77. Available at: http://webarchive.nationalarchives.gov.uk/20160704065459/http://stakeholders.ofcom.org.uk/binaries/enforcement/competition-bulletins/closed-cases/all-closed-cases/cw_823/NCCN_500.pdf

[62] On number ranges where revenue sharing is permitted, the price to the end user may be negative, that is, an out payment may be made to cover the costs of a value-added service which is provided to callers.

[63] In a two-sided market, adding a customer on one side of the platform benefits customers on the other side, that is, there are "externalities" between the two sides. The existence of these externalities means it may be efficient for prices to one side to be low or zero.

[64] The end-user must first decide to use one of these alternatives rather than a 070 number. As noted above, if the end-user does take a 070 number, the substitution possibilities available to the caller are likely to be severely limited.

[65] Note that this is not per se because one side participates for nothing but because the benefits over available alternatives appear small whilst the costs associated with high termination charges appear to be large. Mark Armstrong (*"Competition*

3.68 The concerns we have identified would arise even if there was intense competition between TCPs to acquire end-users. Indeed, the likely result of such competition would be the dissipation of the profits made from callers in increased costs ('gold-plating'), in addition to the harm in retail markets. Whilst it is unclear what proportion of the profits from callers is competed away, we do have a concern that at least some inefficiencies in the provision of 070 services are occurring, in addition to the harm experienced by callers.

3.69 Therefore, we consider that defining a two-sided market including both the provision of call termination (to callers) and of 070 services (to end-users) is not appropriate as it would obscure the market power in 070 termination markets which is the source of the concerns we have identified in these markets (see paragraph 3.22 above).

Geographic market definition

3.70 As noted above, and consistent with the relevant BEREC guidance on geographic market definition, we define geographic markets so that competitive conditions within the market are broadly homogeneous and, at the same time, distinct from those in the surrounding geographic area.[66] Product market definition typically precedes geographic market definition.

3.71 Consistent with our product market definition (separate markets for 070 terminations on each network), we propose to conclude that the geographic extent of each market is defined as the area served by that provider. The competitive conditions a provider faces in providing termination services are not affected by the number of other operators in a particular geographic area since, as set out above, voice termination provided by one provider is not a substitute for termination provided by another. Consequently, we conclude that the relevant geographic market is determined by reference to the area in which the provider offers termination services. This geographic market definition reflects the area in which TCPs can determine 070 WCT rates for the UK 070 numbers allocated to them.

Our provisional conclusions on market definition

3.72 Our provisional conclusion is that the relevant market is:

"wholesale termination services that are provided by [named terminating communications provider] (TCP) to another communications provider, for the termination of voice calls to

in Two-Sided Markets", May 2005), develops a model of two-sided markets (without market expansion effects) in which one side "multi-homes" and is always charged excessive prices, whilst the other (single-homing) side pays low or zero prices, and this charging structure is inefficient. The model can be applied to call termination markets generally. Termination is the "single-homing" side because end-users typically subscribe to only one network whilst callers in effect multi-home because they can call any number, on any network.

[66] See the BEREC Common Position on geographical aspects of market analysis (definition and remedies), 2014. Available at: file:///C:/Users/paul.steffens/Downloads/4439-berec-common-position-on-geographic-aspe_0.pdf

070 numbers within the range which has been allocated to that TCP by Ofcom, for which that TCP is able to set the termination rate."

Market power assessment

3.73 Having defined the relevant markets, we must assess competition in those markets in accordance with the Act and the EU regulatory framework and impose regulation where competition in those markets is found to be ineffective, i.e. where one or more undertakings have SMP.[67]

Definition of SMP

3.74 An undertaking has SMP if "…either individually or jointly with others, it enjoys a position equivalent to dominance, that is to say, a position of economic strength affording it the power to behave to an appreciable extent independently of competitors, customers and ultimately consumers."[68]

Our approach to assessing market power

3.75 In our assessment of market power (needed to make SMP determinations) we take account of the SMP Guidelines, in accordance with Section 79 of the Act, and of the European Regulators Group (now BEREC) working paper on SMP (the ERG SMP Position) that builds on the SMP Guidelines.[69]

3.76 The SMP Guidelines suggest market shares are an important proxy for market power but they also recognise that high market shares are not, of themselves, sufficient indicators of market power, and therefore set out other criteria relevant to an assessment of SMP.[70] In light of the SMP Guidelines, we focus our assessment on the four criteria that we regard as most pertinent to the markets involving the provision of 070 WCT under consideration, namely:

1. market shares (current and future);
2. barriers to entry;

[67] Directive 2002/21/EC of the European Parliament and of the council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive).
[68] Section 78 of the Act, Article 14(2) of the Framework Directive, and paragraph 70 of the European Commission's SMP Guidelines. Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52002XC0711(02)&from=EN
[69] ERG, 2005. *ERG Working Paper on the SMP concept for the new regulatory framework*, pages 3 – 8. Available at: http://berec.europa.eu/doc/publications/public_hearing_concept_smp/erg_03_09rev3_smp_common_concept.pdf
[70] Paragraph 75 of the SMP Guidelines discusses market shares as an important proxy for market power. In addition to market shares, the SMP Guidelines state that the following criteria can be used to measure the ability of an undertaking to behave to an appreciable extent independently of its competitors, customers and consumers: overall size of the undertaking, control of infrastructure not easily duplicated, technological advantages or superiority, absence of or low CBP, easy or privileged access to capital markets/financial resources, product/services diversification, economies of scale or scope, vertical integration, a highly developed distribution and sales network, absence of potential competition and barriers to expansion. A dominant position can derive from a combination of these criteria which taken separately may not necessarily be determinative. See the European Commission's SMP Guidelines, paragraphs 75 - 79.

3. countervailing buyer power (CBP); and
4. evidence on prices and pricing behaviour.[71]

Market shares (1)

3.77 Although a high market share alone is not sufficient to establish SMP, it is unlikely that an undertaking could have SMP if it does not have a substantial share of the relevant market.

3.78 As we defined termination on each TCP's network as a separate market, we consider that each TCP has a 100% share in the relevant market. In other words, each TCP is, in effect, a monopolist in the supply of 070 WCT for voice calls to 070 numbers within its range. This suggests that each 070 TCP has SMP in the relevant market for 070 termination on its network.

3.79 As we do not anticipate changes in the ability of other CPs to provide WCT for 070 numbers within the range allocated to a TCP, we expect that each TCP will retain a 100% share in its relevant market over the next five years.

Barriers to entry (2)

3.80 Next, we consider whether there is scope for a third-party CP to enter the relevant market, by offering 070 WCT within the number range of an existing 070 TCP. If such entry were possible, this could undermine the SMP of the existing 070 TCP, by actual entry or by the threat of entry. As noted above, entry to the provision of 070 services in general may be relatively easy if a TCP can acquire a 070 number range. However, it could not terminate calls to an end-user that was a customer of another TCP, which holds its own range of 070 numbers. Hence it could not constrain the market power that a TCP has in setting the rates for WCT for voice calls to 070 numbers within its allocated number range.

3.81 Entry into the market for 070 WCT on an individual TCP's network is not possible without the agreement of the existing 070 TCP. The latter has no incentives to allow a third-party CP to offer 070 WCT at lower rates.[72] Therefore we consider that very significant barriers to entry will remain over the next five years. The combination of 100% market shares and barriers to entry makes it very likely that a 070 TCP has SMP in its relevant market.

Countervailing buyer power (CBP) (3)

3.82 CBP is the degree of restraint that a buyer is able to place on any attempt by the seller to set its prices above the competitive level. When significant, CBP can offset any market power that the seller may have had.

3.83 To rebut the presumption of SMP arising from very high market shares and barriers to entry, it is not sufficient for a retail telecoms provider purchasing 070 WCT ("the buyer") to

[71] Whilst pricing is not listed as one of the criteria in the SMP Guidelines, excessive pricing is listed in the ERG SMP Position. In particular, *"...the ability to price at a level which keeps profits persistently and significantly above the competitive level is an important indicator for market power*." The ERG SMP Position, paragraph 20.
[72] 070 TCPs do sometimes sub-allocate numbers in their ranges to other providers, but this does not put downward pressure on termination rates because calls to different numbers are not substitutes for each other.

have some CBP. The retail telecoms provider needs to be able to exert sufficient CBP such that the 070 TCP offering WCT for calls to its 070 numbers ("the seller") is unable to act to an appreciable extent independently of its competitors, customers and consumers.

3.84 Even if a retail telecoms provider has the ability to exert CBP (and thus is able to extract benefits from TCPs), rebutting the presumption of SMP requires that benefits extend ("spill-over") to a substantial proportion of all callers to 070 numbers thus including the retail customers of other retail telecoms providers.[73]

Evidence of retail telecoms providers' ability to exert CBP

3.85 Generally, whether a buyer has CBP will depend on whether (a) it is sufficiently important to the seller, in terms of purchasing a significant proportion of the total volume of the seller's output, and (b) can credibly threaten to buy less from that seller in response to a price rise. This usually requires it to have an alternative potential supplier. In the context of mobile or fixed geographic call termination, the prospect of CBP also arises where providers both supply and receive termination services to and from one another, and so (absent regulation) they could potentially restrain the termination rates charged to them by other providers by threatening to raise their own rates. TCPs providing termination to their 070 numbers, however, may not originate calls or purchase 070 termination from other networks.

3.86 BT is clearly large, relative to any 070 TCP, but is subject to regulation which limits its ability to exercise CBP. Firstly, BT's end-to-end connectivity obligation means that it is obliged to agree a contract for termination of calls to "normal telephone numbers" (which includes 070 numbers) on fair and reasonable terms.[74] In addition, BT's provision of wholesale services (in markets where it has SMP) is generally regulated in ways which would prevent it from credibly threatening either to raise charges or to refuse to supply a service. Hence its ability to use these as a bargaining tool is limited and we consider it unlikely that BT has sufficient CBP to constrain 070 termination charges.

3.87 Therefore, the levers by which a retail telecoms provider could attempt to exert CBP, in principle, would be by threatening to block calls to 070 numbers or by setting the retail charges of 070 calls so high as to deter its customers from making calls to 070 numbers. We provisionally consider that retail telecoms providers have few incentives to block 070 calls. Similarly, retail charges for 070 calls are currently high but this does not appear to have had the effect of reducing the termination rates charged by 070 TCPs.

3.88 Nonetheless, we have considered whether there is any evidence of CBP in practice. A detailed analysis of every single bilateral negotiation between each retail telecoms provider and individual 070 TCP is clearly not possible. The evidence we gathered shows that retail telecoms providers pay the same rates (with rates varying between charge bands) for termination of 070 calls.[75] The fact that 070 TCPs set the same termination rates

[73] That is, they should not be confined to the customers of the OCP that has effective CBP.
[74] Whilst BT could reject terms it considered not fair and reasonable, the likely result would be that a dispute would be brought to Ofcom for resolution.
[75] See Annex 9 for the evidence on the rates paid to TCPs for termination of calls to 070 numbers.

(and that these rates do not vary across retail telecoms providers) is consistent with retail telecoms providers having the same (very limited) ability to exert CBP.

Conclusions on CBP

3.89 In the light of the considerations set out above, we propose to find that CBP does not exert a sufficiently material constraint on the market power that 070 TCPs may have in their relevant markets.

Evidence of prices and pricing behaviour (4)

3.90 The evidence we gathered on the rates paid for 070 WCT via our formal information requests, set out in greater detail in Annex 9, indicates that these rates are high relative both to the costs of providing 070 services and to the rates for termination of UK mobile calls.[76] Such high rates are consistent with the ability of TCPs to set 070 WCT rates not being materially constrained.

3.91 As discussed in Annex 9 (paragraph A9.50), we estimate the incremental cost of providing a 070 call to range from 1.096 pence per minute (ppm) for termination to a UK fixed number to 6.011ppm for termination to an international mobile number. Based on volume and termination rate data from transit providers we also estimate the associated profit to range from 22.081ppm (95%) to 17.166ppm (74%).

Provisional conclusion on SMP

3.92 Given our finding that there are separate markets for 070 termination on each TCP's network, and based on our assessment of the four criteria that we consider to be most pertinent for an assessment of market power in the relevant markets – market shares, barriers to entry, absence of CBP and evidence on prices and pricing behaviour – we propose to find that each TCP has SMP in its relevant market, namely the provision of WCT to the 070 numbers which have been allocated to it.

Three-criteria test

3.93 As noted above, the market for 070 WCT is not specifically listed by the European Commission in the 2014 EC Recommendation as a market in which *ex ante* regulation may be warranted. To decide whether it is appropriate to impose such obligations in the 070 WCT market, we therefore need to assess whether the three-criteria set out in the 2014 EC Recommendation are met. We set out below why this three-criteria test in our view is met.

[76] Average rates of 38.84ppm (UK originated calls) and 12.40ppm (international originated calls) for the pn2 Rate based on BT's transit data. The pn2 rate accounts for the largest proportion of UK (95%) and international originated (44%) calls to 070.

Presence of high and non-transitory barriers to entry

3.94 We have provisionally concluded that the relevant product market comprises wholesale termination services that are provided by each TCP to another CP for the termination of (voice) calls to UK 070 numbers allocated to that TCP. Given this definition, we consider that:

- there is an absolute barrier to any other operator entering the market – the 070 range holder has a monopoly on the provision of termination on numbers within that 070 number range; and
- as noted in our assessment of barriers to entry in our SMP analysis above, whilst an existing 070 TCP may sub-allocate numbers it holds to a third-party TCP, this would not constrain the rates it could charge for termination on the numbers it retained.

3.95 For these reasons, we consider the barriers to entry are likely to remain high and non-transitory over the next five years.

A market structure which does not tend towards effective competition

3.96 We have analysed competition in the 070 WCT markets as part of our assessment of market power above. We consider the factors set out there are also relevant for the assessment of this criterion. In particular:

- we consider that end-users of 070 numbers have little or no incentive to drive 070 WCT rates down, and that callers to 070 numbers are not able to effectively constrain 070 WCT rates as they lack alternatives and tend not to be aware of 070 call charges;
- competition between 070 TCPs leads to increased customer acquisition costs which are borne by callers. End-users do not have incentives to switch to alternatives to 070 numbers which are cheaper for callers; and
- termination rates for calls to 070 numbers have remained consistently high, despite a fall in input costs (e.g. the cost of onward routing in the form of termination rates to fixed and mobile numbers has decreased over time), suggesting that competition is ineffective.

3.97 For these reasons, we consider that the market structure will not tend towards effective competition in the next five years.

Competition law alone would not adequately address the market failure(s)

3.98 We consider that competition law would not be sufficient, by itself, to address concerns in this market – barriers to entry will persist and relevant markets will not tend towards competition within five years. We also consider that intervention based on competition law would not be sufficiently fast and effective to prevent harm stemming from anti-competitive or exploitative behaviour.

3.99 In contrast, *ex ante* regulation would not only be more effective in preventing TCPs from setting excessive rates prone to distort competition, but it would also be less costly to

enforce and would (through appropriately drafted SMP remedies) provide clarity to both TCPs and the market as to the types of practices which would be regarded as (non) compliant. We therefore consider that *ex ante* regulation is necessary to maintain effective competition.

Provisional conclusion

3.100 In light of the analysis set out above, we provisionally consider that our proposed 070 WCT market definition satisfies the criteria set out in 2014 EC Recommendation and thus that it is appropriate for Ofcom to analyse these markets in order to determine whether any undertaking has SMP, and thus whether remedies (can and) should be imposed to address competition problems stemming from SMP.

Consultation questions

Question 3.1: Do you agree with our provisional conclusion regarding market definition? Please provide reasons and evidence in support of your views.

Question 3.2: Do you agree with our provisional conclusion regarding SMP? Please provide reasons and evidence in support of your views.

Question 3.3: Do you agree with our provisional conclusion regarding the three-criteria test? Please provide reasons and evidence in support of your views.

4. Remedies

Introduction

4.1 This section describes our approach to, and sets out proposals for, remedying the competition and subsequent consumer welfare concerns arising from the significant market power (SMP) identified in our analysis of 070 wholesale termination markets.[77]

4.2 We consider that the proposals set out in this section would achieve our statutory duties and satisfy the relevant legal tests. In reaching these proposals, we have also taken into account our regulatory experience from previous market reviews and recent developments in this market based, in particular, on information gathered under our statutory powers.

Summary of our proposals

Cap on 070 termination charges

4.3 The following table sets out our proposal for a single maximum cap on 070 termination rates which will apply to all 070 range holders. We propose that this cap is equivalent to the mobile termination rates (MTRs) proposed in our June 2017 Mobile Call Termination (MCT) Consultation,[78] which have been modelled on a long-run incremental cost (LRIC) basis. These are shown in Table 4.1 below. Should the forthcoming MCT Statement make any change to the proposed MTRs, we propose this change is mirrored by 070 termination charges to ensure consistency between the two rates.

[77] 070 numbers allow users to be contacted on any phone at any location, including at home, on their mobile, and abroad. For this reason, as well as being referred to as 'personal' numbers, 070 numbers are also known as 'follow-me' numbers.
[78] https://www.ofcom.org.uk/__data/assets/pdf_file/0011/103340/mobile-call-termination-consultation.pdf.

Table 4.1: Current MTR, forecast LRIC of MCT and consultation range (ppm)[79]

	From 1 April 2017	From the First Relevant Period[80]	From 1 April 2019 (the Second Relevant Period)	From 1 April 2020 (the Third Relevant Period)
Current MTR (nominal)	0.495	0.493	tbc[81]	tbc[82]
Cost (2015/16 prices)	0.489	0.468	0.449	0.433
Range (2015/16 prices)		0.355-0.602	0.338-0.583	0.323-0.567

Source: Ofcom 2017 MCT model

Structure of this section

4.4 This section first outlines the aim and effect of our proposed regulation for a charge control on the wholesale charge recoverable from the termination of calls to 070 numbers, highlighting specific consumer harms. We then consider the potential remedy options available to us and assess the extent to which they address those harms. With reference to the central question of which elements of the 070 value chain should be recovered from termination, we finally set out what we consider to be the appropriate form of charge control based on our preliminary conclusions on those elements.

Competition concerns and impact on consumer welfare

4.5 As discussed in Section 3, we consider that, as a result of their SMP, 070 TCPs have the ability and incentive to set high termination charges in a relatively unconstrained manner. We are concerned that this market power leads to an excessive level of revenue raised through terminating calls to 070 numbers and, in turn, different types of consumer harm, as described below.

High call prices and bill shock

4.6 Wholesale 070 termination rates are high, relative to the wholesale costs of providing the termination service. These high rates are, in turn, reflected in relatively high retail call prices (compared to prices for calls to geographic numbers, mobile numbers and many international calls). In particular, as the termination rates are materially above mobile and

[79] Also see Annex 7: https://www.ofcom.org.uk/__data/assets/pdf_file/0014/103343/mobile-call-termination-consultation-annexes.pdf.
[80] This period is intended to commence after a three month implementation period.
[81] To be calculated in accordance with the formula set out in the draft legal instrument at Annex 5.
[82] To be calculated in accordance with the formula set out in the draft legal instrument at Annex 5.

fixed rates, retail telecoms providers do not include such calls in inclusive call bundles, given the risk of high volumes distorting the cost of such bundles. So, while "out of inclusive call bundle charges per minute" are not in every case dissimilar to mobile rates, exclusion from inclusive packages means that for most people in most circumstances the effective call charge is very high.

4.7 As shown in Table 4.2 below and in Annex 8, maximum retail prices for calls to 070 numbers range between 45 pence per minute (ppm) to 250ppm. Further, while for some packages the 070 call charge is not much higher, or even equal to, the out of bundle charge for a mobile call, the central point here is that 070 are never included in bundles.

Table 4.2: Maximum[83] retail call prices for 070 (ppm)

Telecoms Provider	Mobile Pay monthly	Mobile Pay as you go	Fixed
O2	55	66	
Vodafone	55	45	
Three	104	104	
EE	75	75	65
Virgin Media	250	250	51
TalkTalk	75	75	51
BT			49
Sky			51
Vonage			83
Post Office			52

Source: Operator websites.

4.8 Further, the evidence from market research set out in Annex 8 shows that the expectation of the caller is such that when calling a 070 number, they often believe they are calling a mobile (i.e. another '07') number. Thus, callers are unlikely to be aware of the true cost to them of using the 070 range.

4.9 When compounded by the high retail prices and the over-consumption by end-users mentioned in Section 3, we consider that customer confusion can lead to considerable harm through unexpected instances of 'bill shock'. Such confusion is also likely to mean

[83] In most cases this are the standard call charge but some providers have a range of charges

that usage of 070 numbers will tend to remain higher than if callers were aware of the cost. In fact, and as outlined in Annex 8, 68 of the 070 complaints received by Ofcom between January 2013 and May 2017 related to consumers' surprise at receiving a higher than normal bill following a call being made to a 070 number.

Distorted choice between 070 and alternatives

4.10 In Annex 9 we set out our analysis of current 070 termination rates, as well as wholesale costs incurred by providers operating in this market, which shows that termination rates charged to retail telecoms providers are far in excess of costs. This finding indicates that the provision of a 070 service is profitable and hence TCPs may therefore have incentives to overpromote the service to call recipients.

4.11 We consider that this may lead to over-use of 070 numbers by end users. Individuals seeking a similar functionality have other options to 070 numbers, e.g. the use of a mobile phone domestically or via roaming or over-the-top (OTT) services, such as Skype. However, end-users do not bear the costs of choosing a 070 number and may not take sufficient account of the costs to the caller when they try to reach them. As a result, their choices are distorted and usage of 070 may be higher than is socially optimal.[84] In an era of free mobile roaming across the EU and in many non-EU countries it may be desirable for users of the range to consider its value to them in light of the full costs of the service, rather than such costs to be passed to callers who are unable to make such a choice.

Gold-plating

4.12 SMP in 070 termination also potentially leads to inefficient service delivery; as 070 TCPs can recoup all costs from the calling parties, they are protected from competition on the 'receiving' side of the market and do not need to minimise costs to attract end-users. Further, they are incentivised to 'gold-plate' services to call recipients (for example the provision of additional free services such as 'fax to email' and 'voicemail' which are offered by at least one provider), which may result in additional features being provided despite them not being valued highly by end-users.

Service provider fraud

4.13 High 070 termination rates caused by 070 TCP's SMP have the potential to lead to many cases of fraudulent use of the number range. According to a 2013 National Fraud Intelligence Bureau (NFIB) report to Ofcom, there were 4,596 offences reported to 'Action Fraud' in the period 1 January 2011 to 31 July 2013 that related to Personal Numbering Services (PNS). 070 numbers accounted for 96.1% of these and 98.4% of the total victim-

[84] High usage could in theory benefit callers through network effects (i.e. callers can reach more recipients). However, we consider that it does not apply in this case as the ready availability of alternatives means that in the absence of 070 the call recipient is likely to use another call number, rather than to cease to receive calls altogether.

reported loss of over £17.1m.[85] Not all fraud is likely to be reported and we estimate up to 60% of 070 traffic is potentially fraud-related.

4.14 One type of fraud arises because service providers using 070 numbers earn a profit from termination rates for calls to these numbers through a revenue share arrangement with the end-user. Fraudulent users posing as service providers convince callers to ring under false pretences (e.g. a text message saying they have been mis-sold payment protection insurance (PPI)) in order to benefit from their share of the very high termination rates. For example, 94 of the 070 complaints received by Ofcom between January 2013 and May 2017 related to consumers feeling they had been tricked into calling a 070 number. Most of these complaints related to consumers applying for a job online and receiving a response asking them to call a 070 number to discuss the job or set up an interview, while some related to the use of dating websites or missed calls from a 070 number asking for an urgent call back.

4.15 This type of traffic-generating fraud is particularly successful because there is very low consumer price awareness of the 070 number range and, as such, a vulnerability to direct scams. As set out in Annex 8, consumers sometimes confuse 070 numbers with mobile phone numbers, which also start with '07', and we are therefore concerned about evidence of scams designed to make consumers believe they are calling a mobile number.

4.16 Individuals may take advantage of consumer confusion, resulting in consumers calling a 070 number back while thinking the call will be charged at the same rate as calls to mobiles. However, call prices are typically significantly higher for 070 numbers than they are for mobiles – up to £2.50 a minute.

International artificial traffic inflation

4.17 Data from our research shows that, between January 2016 and August 2017, there were approximately 30% more calls generated to personal numbers from abroad when compared to the relative distribution for both geographic and mobile destination numbers, and that this figure even exceeded 50% in several months.

4.18 This is indicative of the generation of calls to take advantage of the failure in some international telecoms providers to distinguish in their charging between low cost calls to UK mobiles and higher charged 070 calls. Thus, fraudsters are able to generate traffic to their own numbers at a lower cost than the revenue received.

Identity-related fraud

4.19 A second type of fraudulent activity emerges from the ability of 070 TCPs to set excessive termination charges. This relates to situations where individuals engage in fraud using 070 numbers to avoid being traced.

[85] I.e. the vast majority of the £1,300+ daily losses victims reported.

4.20 As 070 numbers are typically free for call recipients to use, TCPs do not need to have details of an end-user's true identity – e.g. for billing purposes. As noted in Annex 8, the Serious Organised Crime Agency raised the point that mass-marketing fraudsters exploit the fact that many callers are unaware that 070 number may not go through to somebody in the UK, due to the confusion with UK mobile numbers.[86] Hence, this allows end-users to undertake activity to defraud callers while simultaneously using their 070 numbers to hide their identity or location.

Poor reputation

4.21 Finally, we consider that the examples of misuse of the 070 range presented above have, in the past, undermined the use of these numbers for innovative delivery of electronic communications services, despite efforts since 2001 to improve its reputation. Stakeholder input to our review suggests that some telecoms providers are reluctant to innovate and invest in services operating on the 070 range because of a negative reputation with both telecoms providers and customers.

4.22 For example, and as described in Annex 8, in [✂], [✂] and [✂] approached Ofcom to discuss a potential joint venture for the development of a number and call forwarding service, but were reluctant to use 070 numbers due to their poor reputation.

Our considerations

4.23 In light of the consumer harm arising out of deliberate misconduct or market failures described above, we have provisionally determined that regulation is necessary to prevent 070 TCPs from exploiting their market power. Before considering *ex-ante* regulation, we must consider whether competition law remedies would be sufficient to avoid this exploitation. The case for *ex-ante* regulation is based on identifiable market failure, where competition may not become established without such regulation being put in place. *Ex-ante* regulation means, in turn, that a better-functioning market will be able to rely more on *ex-post* competition law in future.

4.24 We consider that competition law alone would not be sufficient to address concerns in this market. Given the static nature of termination rates over the last decade, as other input costs have fallen, we do not believe this market will tend towards competition and therefore *ex-post* remedies on their own are likely to be insufficient[87].

4.25 In turn, we consider that the best approach is to use a charge control as our primary tool for addressing the competitive and consumer harm occurring on this number range. In our view, the central impact of 070 providers' SMP is that it affords them the ability to set termination charges (currently on an unregulated basis) substantially in excess of costs.[88] Not only does this lead to disproportionately higher retail call prices, but also to fraud and harmful revenue sharing arrangements. Therefore, we consider that the most fitting

[86] Now known as the National Crime Agency.
[87] See also, our analysis on the three-criteria test in Section 3, above.
[88] Please see Annex 9 for evidence on the levels of wholesale costs and prevailing 070 termination rates.

response is to address 070 termination rates directly through a charge control. The rest of this section sets out our analysis of the appropriate cost standard to adopt for the proposed control.

Potential approaches to setting a charge control

4.26 Having identified the consumer harm stemming from SMP in 070 call termination, we have considered a number of options for the nature of the proposed charge control. In our view, the decision as to the type and level of charge control we propose to implement should involve a determination of the division of cost recovery between the callers and the receivers of 070 calls.

4.27 The price of the calls to 070 numbers (and therefore most of the overall consumer price of using this range) is borne by the calling parties. As such, 070 TCPs can recover the majority of costs and desired profit, if not all, through the termination rate.[89] However, in considering our approach to setting a charge cap, there is no requirement for us to sustain the current model of cost recovery. Accordingly, we consider that there are three broad options open to us:

a) Set a price control remedy which retains the current model of cost recovery – i.e. a '**calling party pays**' (CPP) approach; or

b) Set a price control whereby all costs are recovered from call recipients – i.e. a '**receiving party pays**' (RPP) model; or

c) Set a cap on 070 termination rates based on some **assignment of costs** between the calling and receiving parties.

Other relevant assessment criteria

4.28 In the section below, we set out our assessment of the degree to which each of our potential charge control options addresses the identified consumer harms. In doing so we have also considered the objectives in Article 8 of the Framework Directive, which state that any remedy to the SMP identified must be based on the nature of the competition problem identified, proportionate, and justified. We have also taken account of section 88 of the Communications Act 2003 ('the Act'), which requires that it must appear to us that the setting of the charge control condition is appropriate for the purposes of:

- promoting efficiency;
- promoting sustainable competition; and
- conferring the greatest possible benefits on end-users of public electronic communication services[90].

[89] Where they face very limited competitive pressure and where callers are poorly informed about the call price.
[90] See our analysis under "Legal tests" further in this section.

Evaluation of potential charge control options

4.29 In the sub-sections below, we first assess the three identified options for charge controlling 070 termination rates and then set out our provisional conclusions and proposal in light of that analysis.

a: Calling party pays (CPP)

4.30 This type of price control would not require much (if any) change to the current pricing structure whereby the use of a 070 number is free to call recipients. As set out in Annex 9, current termination rates for 070 calls allow for significant over-recovery against 070 TCPs' wholesale costs. A price control set at a level of 070 TCPs' costs would, by its very nature, allow for the full recovery of costs incurred in the provision of calls to these numbers and thus would allow existing providers to continue to operate profitably.

Wholesale and retail charges

4.31 Setting a price control remedy based on a measure of the costs of terminating 070 calls would likely have the effect of reducing termination charges and, to a large extent, cost over-recovery. We consider that this could have some positive flow through to retail prices and reduce consumer harm as retail telecoms providers would need to recover a lesser cost of termination from end-users. However, possibly compounded by customer confusion between different 07x number ranges, any wholesale charge above the MCT rate is likely to mean that the retail telecoms provider will not align 070 call prices with mobile prices or include such calls in free call bundles. Also, 070 TCPs would still be able to recover the majority (if not all) of the costs of providing a 070 service from callers, although they will have experienced a fall in profit and could seek additional revenue from end-users of the numbers.

Distorted choices

4.32 Further, a continued full cost recovery would mean that there remains an incentive for 070 TCPs to offer the service at low or zero charge to end-users. We consider this would not encourage allocative efficiency as it would lead to distorted relative prices meaning that, while users are likely to pay "too little", callers are likely to pay "too much". This distortion in relative prices results in continued inefficient choices between 070 numbers and other alternatives by potential number holders.

4.33 Moreover, this form of cost recovery has the effect of encouraging 070 TCPs to compete for end-user customers to a degree that may not be efficient. We have observed instances of gold-plating, whereby providers offer too many functionalities even if users do not value them particularly highly (e.g. free fax-to-email services). We consider that, while such actions may be less prevalent in the event of lower termination revenue, the incentive still continues. This distorts the choice of call recipients between 070 and substitutes.

Retail pricing and bill shock

4.34 Our estimates of 070 TCPs' costs suggest that a 070 termination rate set by reference to these costs would still be likely to result in call prices being significantly higher than prices of calls to other number ranges, in particular mobile numbers[91]. This reflects the fact that legitimate uses of 070 numbers incur the cost of redirecting a call to another fixed, mobile or overseas network. Our estimate of the costs of a 070 call range from 1.096 pence per minute (ppm) for termination to a UK fixed number to 6.011ppm for termination to an international mobile number.

4.35 Further, the continued consumer confusion over 070 and mobile numbers which we expect is likely means that callers are likely to continue incurring higher bills relating to these numbers than they were anticipating, or would have chosen to incur.

Fraudulent activity

4.36 We consider that, in addition to high retail prices, the current over-recovery of wholesale costs can also lead to illegitimate use of the number range, designed to scam or defraud consumers. Significantly reducing the potential for this over-recovery through a cost-based cap could reduce the incentive and scope for some types of fraudulent activity, particularly those related to direct domestic AIT.

4.37 However, as fraudsters do not incur the full set of costs of legitimate operators of the range (for example, the cost of forwarding the calls to the final network), 070 numbers would still potentially be open to misuse, albeit with a lower return per minute. Further, this sort of price control would not encourage 070 TCPs to know, or have proper records of, their customers and hence may perpetuate police concern over identity-related fraud.[92]

Additional criteria

4.38 In order to determine the level of any cap on 070 termination rates, we must consider the scale of costs incurred in the provision of calls to these numbers. As shown in Annex 9, our analysis of data gathered under our formal powers suggests that the cost of providing 070 services varies widely between operators, and is likely to be distorted by the high level of fraud on the range. Given this range of costs[93], we consider that there is a practical difficulty in setting an accurate, single price per minute figure on which to base a maximum termination rate and it is likely that we may need to err on the side of a more generous control. Further, we consider that this would prevent us imposing an efficiency incentive into a charge control to address the poor cost minimisation incentives discussed above.

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[91] E.g. calls to mobile numbers given very low MTRs.

[92] For example, the international mass marketing fraud raised with us by the Serious Organised Crime Agency described in Annex 8.

[93] As discussed in Annex 9 (paragraph A9.50), we estimate the incremental cost of providing a 070 call to range from 1.096 pence per minute (ppm) for termination to a UK fixed number to 6.011ppm for termination to an international mobile number.

b: Receiving party pays (RPP)

4.39 This type of price control would require a dramatic shift in the current market structure to a model where 070 numbers have a zero termination rate (this is different from freephone where the recipient of the call has to also pay for the call to be originated). It would allow for the full recovery of costs incurred in the provision of calls to these numbers, allowing existing providers to continue to operate profitably; however, all cost would be recovered from call recipients rather than the calling party as is the case today.

4.40 While such an approach would likely remove incentives for fraud on this range and would encourage a revision of retail charges, it is far from clear that this would be a proportionate response. We do not consider it is necessary for the 070 TCP to recover all revenue from the call recipients in order to respond to our concerns.

4.41 Incentives for misbehaviour on the 070 number range are likely to be removed through reducing the termination rate to a level to remove excess profit. Such a level is clearly non-zero as there are inescapable costs from operating 070 numbers.

4.42 Retail telecoms providers do not need a zero termination rate to have an incentive to reduce retail prices to match those of calls to mobiles as it should be sufficient to set a rate closely aligned to the current MCT for operators to consider that there is no additional revenue risk from aligning charges.

4.43 Finally, an efficient choice between 070 and other forms of mobile communications would arguably be distorted against 070 if there was a zero termination rate as in such cases the incremental cost of receiving a 070 call would need to be recovered from the call recipient whereas for mobile numbers it is recovered from the caller.

4.44 For the above reasons we would not support this approach.

c: Costs recovered from both parties

4.45 We consider that the mechanics of a price control based on an assumed allocation of costs recovered between callers and end-users would still allow for the full recovery of the costs of termination because 070 providers could charge end-users.

Wholesale and retail charges

4.46 In contrast to the price controls discussed above, we consider that a control involving some assignment of costs between 070 callers and end-users is better placed to address the consumer welfare issues arising on this number range. With the costs of calls shared between callers and end-users, we would expect that reducing the (currently excessive) wholesale termination rate would flow through to decreased retail call prices. Also, this model would likely provide an incentive for 070 TCPs to reduce costs as they would not be able to recover costs in full from the termination rate. This type of control may require providers to recover some costs from end-users, and in so doing, exposing this recovery exercise to the competitive side of the market.

Distorted choices

4.47 A pricing structure in which 070 end-users pay nothing creates a distortion because they do not bear the costs of their choice, despite enjoying the benefits of the service. As end-users are beneficiaries of the use of this range, we consider that driving a proportion of the cost recovery to the 'receiver' side of the call (where competition sits) offers more scope for an efficient level of service provision and pricing. This is because it would lead to consumers considering the choice between using 070 numbers and other available substitutes, bearing in mind the price they face, and resulting in them making more efficient choices which reflect the true social costs of their choice. However, the degree of efficiency depends on the termination rate chosen. If the closest substitute to a 070 number is a mobile number from a functionality perspective, a rate close to the MTR could mean that call recipients would pay a rate that reflects the incremental cost of choosing 070 rather than mobile.

4.48 We would also expect this approach to reduce the inclination of 070 TCPs to gold-plate their services as end-users would only buy them if the additional benefits outweighed the incremental cost of the investment.

Retail pricing and bill shock

4.49 We recognise that any wholesale remedy is, by itself, unlikely to fully resolve our concern regarding pricing and over-consumption of the 070 range.

4.50 Retail telecoms providers have, with some notable exceptions such as for Freephone services, flexibility to set retail prices. Currently, there is no obligation on retail telecoms providers to align prices for calls to 070 numbers with prices of calls to mobile numbers or to include such calls in inclusive call bundles, and this review does not seek to impose such an obligation.

4.51 However, if 070 termination rates were lowered to be at, or below, MTR levels, the existing commercial disincentive for including 070 numbers in call bundles that include mobile numbers would be removed (as consumption of 070 within the bundle would not unduly distort the expected profitability of the package). We would expect, therefore, retail telecoms providers to respond to a significant drop in termination rates by reducing prices or making such calls inclusive given the concern that many retail telecoms providers have about the harm from bill shock to their reputation.

Fraudulent activity

4.52 Further, we consider that a termination rate set below the full cost of the 070 service would act to significantly curtail, if not eliminate, misuse of the 070 number range, thereby helping to further the interests of citizens and consumers.

4.53 Without any excess return from terminating such numbers there is no incentive to encourage calls to these numbers domestically. Further if the termination rate was at or below the MTR, there would be no incentive for inflated international traffic to be

generated. The challenge is therefore to set a rate which, to best extent possible, eliminates excess returns which may otherwise be available to fraudsters.

4.54 In addition, the need to earn revenue, or recover costs, from end-users will likely ensure that 070 TCPs engage in a direct contractual relationship with their customers. This would help police to tackle fraud facilitation, where criminals use these numbers to hide their identity or location, and therefore evade regulators and authorities seeking to stop their activity. While this type of fraud activity is a relatively small proportion of overall 070 traffic, the scale of the total impact on deceived consumers is potentially very large.

Additional criteria

4.55 In principle, a market structure whereby costs are recovered (i.e. charges are paid) from one side of the market is likely to be simple and straight forward for 070 TCPs to implement. However, models in which costs are recovered from both sides of the market are common, and in the case of numbering services, the rule. Accordingly, we consider a shift in this pricing structure would be both possible and relatively easily implemented, as most, if not all current 070 TCPs also provide services in which they do directly bill their customers. We therefore expect that most TCPs, are already likely to have billing platforms or systems in place which could be adapted to include 070 end-users at relatively little cost.[94]

4.56 On the evidence we have gathered, we have reason to believe that the majority of 070 operators have established systems for customer billing[95]. We recognise that there may be some 070 TCPs who do not have such systems, however these are readily available commercially. Further, even if there are some 070 TCPs who do not have fully developed billing systems in place, it is likely that they will at least have developed the pre-requisite data systems for identifying their customers and matching them to a given number. We therefore consider that the cost of implementing an appropriate billing system is likely to be small and incremental, resulting from a change to an existing system, and therefore much lower than if a 070 TCP was having to build an entirely new system. Further, given the number of operators in the market, we would expect there is little prospect that such a cost will have a material impact on the level of competition available to users of 070 numbers should they wish to continue using the service.

Provisional conclusions

4.57 On balance, we consider that Option c ('costs recovered from both parties') is better-placed to address the identified consumer harms and fulfils the additional framework criteria set out above when compared with Option a, and is a more proportionate intervention than Option b. We therefore provisionally conclude that the most appropriate approach to charge controlling 070 termination rates is one that makes for some cost

[94] For example, providers such as Magrathea and Telecom2 offer numbers on ranges in addition to 070 which are not free to obtain or to receive calls on.
[95] We have reviewed the service offerings of 070 allocatees who combined control more than 80% of all traffic on that range and found that they all offer alternative services which require direct customer billing

allocation between the two sides of the market. The following section sets out our consideration of how this assignment of costs should be made.

Type of cost allocation between callers and call recipients

4.58 We have set out above our view that the current pricing structure leads to distorted choices between 070 numbers and alternatives, as end-users who have chosen to use 070 numbers do not face the true costs of their choice. We consider that to remedy the competition problems on this range, it is preferable to set a charge control involving an assignment of costs incurred in the provision of 070 calls between the caller and the end-user. As such, the next stage of our remedy evaluation is to determine what this allocation should look like.

Explicit allocation of costs

4.59 One option for allocating costs between the caller and end-user would be to review the costs associated with each component involved in the provision of 070 call services and to determine the appropriate basis for allocating the costs of network elements and/or functionalities to each party. If cost causation does not provide clear guidance, one alternative could be to allocate costs in proportion to each party's share of the benefits.

4.60 As described in Annex 9, relevant cost components include switching services, an online interface which the consumer uses to specify the destination number to which they want calls to their 070 number(s) to be diverted, and the re-routing of those calls to the specified destination. However, we consider that it is not straight-forward to accurately distribute between callers and end-users the costs incurred as well as the benefits obtained in the provision of 070 calls.

4.61 This is because both sides of the market receive at least some benefits from the successful use of this number range. While the distribution of benefits is likely to be skewed towards end-users, we consider that callers will also derive some utility from being able to reach individuals who are, for example, selling items or using the same dating sites. While it is likely to be allocatively efficient for both parties to be liable to some degree for the costs they incur, we consider it difficult to identify the costs which are attributable in their entirety to one side or the other.

4.62 Further, we consider it equally difficult to identify the proportion of each cost component attributable to each party. The benefits from 070 are likely to occur at the level of the service as a whole, rather than at the level of individual cost components and so do not provide a means to allocate components in such a granular way. Even at the level of the service as a whole, it is unlikely to be possible to reach an individual value as to what share of the benefits, and therefore the costs, should be borne by either the caller or end-user.

4.63 Even if we were to decide upon a certain cost allocation, as noted earlier in this section, our analysis of data gathered under our formal powers suggests a wide range of costs between different 070 TCPs. Therefore, even if we were to assign costs between callers and end-users, we would still not be left with a single price per minute figure on which to

base an appropriate 070 termination rate. We could consider using an average of the 070 TCPs from which we have gathered data; however, we consider that it is difficult to estimate the efficient level of costs from data on actual costs, especially when these relate to only one or two years. Actual cost data based on company accounts can be distorted in either direction by temporary and/or firm-specific factors. This approach therefore does not appear to offer a clear path to an answer and, on that basis, we have considered taking a 'benchmarking' approach instead.

Benchmark of a regulated charge

4.64 An alternative option would be to set a benchmark price control based on a charge from a previous call termination market review or decision. Whilst this is different to the approach which we usually apply in market reviews, we consider that the specific circumstances in this case warrant its consideration, noting that we consider it is an option open to us to adopt under the statutory framework. A benchmark of an existing controlled termination rate would also have the benefit of incorporating our best estimate of the cost of terminating a call, some of which would overlap with 070 costs.[96]

4.65 We have considered the following candidates for a benchmark rate:

i) The 03 termination rate ('the 03 rate') set out within our final determination of the regulatory disputes between BT and each of EE and Three.[97]

ii) The fixed termination rate (FTR) from our latest fixed call termination (FCT) market review;[98] and

iii) The MTR proposed in our latest MCT market review consultation.[99]

4.66 The current MTR is 0.495ppm, while the current FTR is 0.032ppm. In addition, our 2015 determination did not see fit to revise BT's 03 termination rate of 0.383ppm. Thus, any of these three charges would represent a significant fall in 070 termination rates if used as a benchmark.

Use of the 03 termination rate

4.67 The 03 termination rate was set as the result of a dispute resolution (between BT, EE, and Three), which set the rate such that it included estimates of the cost of onward transit of the call to a final geographic number.[100] The 03 rate therefore shows how estimates can be used as an indication of a rate which is clearly sufficient to cover the incremental costs of receiving and forwarding a call (excluding, of course, the cost of terminating to a network which charges more than a fixed UK network).

[96] We also note that benchmarking is consistent with the EC's regulatory framework. Specifically, other national regulatory authorities (NRAs) have used the UK MTR as a benchmark, rather than build their own mobile LRIC models.
[97] https://www.ofcom.org.uk/__data/assets/pdf_file/0019/84124/final_determination_cw01139.pdf.
[98] https://www.ofcom.org.uk/__data/assets/pdf_file/0014/50720/final_statement.pdf.
[99] https://www.ofcom.org.uk/__data/assets/pdf_file/0011/103340/mobile-call-termination-consultation.pdf.
[100] https://www.ofcom.org.uk/__data/assets/pdf_file/0030/76395/determination.pdf.

4.68 While this would therefore seem a suitable benchmark given its level and the role of 070 numbers, as the 03 termination rate has not been set in the same way as the FTR and MTR (i.e. it is not a regulated charge), it could be subject to change by BT and therefore we do not consider it is suitable as a benchmark to be used on an ongoing basis for 070 numbers.

FTR/MTR

4.69 As the FTR and the MTR are both regulated rates, we do not have the same concerns as to their stability as we have for the 03 rate. Both options, based as they are on LRIC of call termination, would appear to offer a reasonable proxy for the purposes of imposing a charge control in this case.

FTR

4.70 The lower rate of FTR is clearly attractive as the lower the rate the lower the risk of excess revenue that could encourage revenue fraud. However, there is a question as to whether such a rate is lower than is necessary to address our concerns.

4.71 We observe that the fact that the FTR rate is substantially lower than the 03 rate, thus raises the question whether it is sufficient to make a reasonable contribution to the recovery of the costs of operating the 070 service, even if the final network termination rates are excluded. Setting a cap at a level which would mean that all or nearly all of the costs of the 070 service would be recovered from the called party is arguably (as we discussed earlier in the case of a zero termination rate) lower than is necessary to address our concerns.

MTR

4.72 On the other hand, the MTR is higher than the 03 rate, which gives us confidence that the cap would allow a reasonable share of the costs of 070 service to be recovered from both the caller and the called party.

4.73 Further, the MTR might be argued to more closely align with consumer expectations related to this call. The evidence from market research set out in Annex 8 shows that the expectation of the caller is such that when calling a 070 number, they often believe they are calling a mobile (i.e. another '07') number. From their perspective, mobile call services are likely to be the most direct substitute for using a follow-me number. We consider that the amount consumers would expect to pay for the call will also be equal to the per minute price of a mobile call.

4.74 In addition, we consider the decision of a call recipient when choosing a 070 service. As a personal number, 070 allows the end-user to be reached in multiple locations. A mobile can also provide the same functionality, though end-users have to pay for a mobile service – i.e. by either having a SIM card or a monthly subscription.

4.75 We therefore recognise the benefits to both sides of the market of using the 070 number range, but consider that they could be obtained from other call services, such as using a mobile phone. In terms of a wholesale charge, this would suggest making a read-across to mobile and using that as our counterfactual. In our view, it would therefore be reasonable

for us to use a benchmark approach to set a charge in line with the MTR, which uses LRIC. We consider that it would be efficient for the additional costs involved in providing a 070 call, for example onward routing, as compared to mobile calls, to be recovered from end-users. If (as we consider likely) most users of 070 numbers considered mobile numbers to be an alternative to 070 as a service offering mobile connectivity, the additional costs over and above the cost of mobile termination would, in our view, be a reasonable measure of the incremental cost of the end-user's decision to take a 070 number.

4.76 Finally, it is arguably necessary to set the cap at the MTR to provide the right incentive for telecoms providers to align their 070 and mobile retail prices. Any material premium on the 070 termination rate above MTR is likely to undermine convergence of the retail prices and more importantly the inclusion of 070 in call bundles.

Assessment

4.77 Either an explicit cost allocation by Ofcom or a benchmark rate would force 070 TCPs to recover costs from the side of the market where customers have greater visibility of the specific charges for a 070 service and a greater potential to switch to alternatives. This would be likely to result in a more efficient choice between 070 numbers and other alternatives, such as Skype, as end-users would be faced with more of the costs associated with their decision. This would also have significant efficiency benefits as it would be likely to result in number providers responding better to price signals and only incurring the additional costs of a 070 service where these are genuinely valued by users.

4.78 In principle, an explicit allocation of costs would ensure that the 070 termination charge is based on the actual costs incurred by providers in terminating a 070 call on their network. However, as neither callers or end-users are the sole cost drivers in the chain or derive all benefits from this service, we consider that we cannot accurately allocate costs to either party for the purposes of setting a singular, cost-based termination rate. In our view, there is a better option for 070 termination rates and we have provisionally concluded that it would not be appropriate to consider each cost element individually.

4.79 On the basis of the arguments set out above we consider that choosing the MTR rate as the cap is the most proportionate response to the identified competition concerns.

4.80 A lower cap, which would mean that all or nearly all of the costs of the 070 service would be recovered from the call recipient, is arguably below that which is necessary to address the concerns that arise from the SMP. Alternatively, a cap based on the MTR would reduce excess returns and the risk of fraud and provide the right signal to encourage the alignment of retail prices with those of call to mobile numbers – the service that the 070 range is most frequently confused with.

4.81 We recognise that capping 070 termination charges at the MTR means that they will be less than the costs of providing a 070 service if you include the onward network routing costs which are currently covered by the termination rate of 070 in most cases; however, we reiterate that this would not prevent 070 providers from recovering their costs – it would simply require them to recover some of these costs from 070 end-users (with

desirable efficiency effects as set out above). This would be likely to lead to lower 070 number usage for existing users but equally if this led to an improvement in the reputation of the range we may see new legitimate users emerge. Even if it simply led to lower usage and less investment in the 070 number range, we provisionally view this as an improvement from the *status quo*, given the extent of fraudulent use and the likelihood that some current usage is inefficient.

4.82 Using the MTR has some practical advantages in that it is straightforward to implement without being prone to manipulation by TCPs. It is, however, likely to require 070 TCPs to charge end-users, which requires new billing systems and relationships to facilitate the earning of a normal rate of a return from these customers. Still, using the MTR may provide the incentive for 070 TCPs to reduce costs and would likely be sufficient to address the consumer and competition problems identified and to meet the objectives in Article 8 of the Framework Directive, particularly efficiency and maximising end-user benefits. We therefore consider that the reasoning points to using the MTR as the relevant benchmark for 070 termination and propose to set a maximum cap on 070 termination charges equivalent to that rate. Our proposed termination charges for the next three years are set out in the Table 4.1 above, the currently proposed termination charge from the First Relevant Period[101] would be 0.493ppm (this is still subject to consultation and may, of course, change). From 1 April 2019, and 1 April 2020 respectively, this charge will change in accordance with the formula set out in the draft legal instrument at Annex 5.

Further considerations

Impact of our proposal

4.83 Having assessed three charge control options and provisionally concluded that it is appropriate to adopt the MTR as a cap for 070 termination rates, we have also considered how we expect our proposed remedy to impact operators and the market more broadly.

4.84 As set out in this Consultation, our aim in undertaking this market review is to address the harm identified as a result of 070 TCPs having SMP over the termination rates charged for those numbers. This harm includes:

a) Excessive retail prices being charged to callers of those numbers;

b) Bill shock, as result of consumer confusion between 070 numbers and mobile numbers;

c) Distorted choices between 070 numbers and alternatives; and

d) Encouragement and facilitation of fraud (including identity-related fraud) which could be as high as 60% of all termination revenue;

[101] As defined in the draft Legal Instrument at Annex 5. This commencement date is still to be determined, pending a three-month implementation period.

4.85 Having assessed the evidence (as discussed in Section 3 and detailed further in Annex 8), our provisional conclusion is that capping 070 termination charges at the same level as the MTR is an effective remedy in addressing the harms we have identified. By setting the wholesale charge for terminating 070 calls at the same level as charge for terminating mobile calls, it is unlikely that 070 TCPs will be able to exploit their SMP by setting excessive termination charges. To the extent that there remains any consumer confusion between 070 numbers and mobile numbers, the risk of bill shock is likely to minimised, as the cost of the calls to either number range will be the same. Further, in light of evidence on the scale of misuse, we anticipate that the likely knock-on effect of the proposed charge cap will be that those benefitting from misbehaviour will look to exit (e.g. by relinquishing their allocation of 070 numbers) and the market will coalesce around a smaller number of legitimate players.

4.86 Having assessed the options it is our provisional view that imposing a charge cap based on the recovery of costs from both the calling and receiving party is both an effective remedy, and the least onerous method for achieving our aims.

4.87 While operators who wish to continue offering follow-me services on the 070 range are likely to need to establish new commercial relationships with their customers, we believe that 070 TCPs accounting for over 80% of traffic on this range also provide services on other number ranges, whereby they bill end-users. Given this, we consider that the cost to 070 TCPs of establishing appropriate platforms is unlikely to be particularly significant. Establishing contact with their customers to modify the arrangements will, of course, require TCPs some time, but they should at least have telephony contacts for their customers.

4.88 Further, as stated above, our proposals do not seek to inhibit 070 TCPs from recovering revenue per se; it is simply that, by capping the wholesale cost of terminating 070 calls, 070 TCPs will likely need to recover costs from end-users as well (where we estimate a potential shift in revenue to that side of the market of around £5m per annum). Alternatively, we have identified three further paths that affected service providers could take in response to the proposed charge control:

- Keep their services on 070 numbers: some providers may wish to retain 070-based services under the new system due to the practical difficulties of switching away, or the difficulty of replacing offered services like-for-like under a different number range;
- Migrate 070 services to alternative number ranges with the potential for raising revenue: providers may decide that the most effective option to recover revenues would be to move the services currently offered by 070 to a different number range, such as 08 or 09 premium numbers;[102] or
- Migrate 070 services to 03. Here providers can utilise existing commercial models, allocation and billing systems for a range which acts to divert calls to geographic or

[102] We note that [✂] has discussed its intention to change number ranges should we intervene in the market in the way we are proposing.

mobile numbers with the advantage that the retail cost of such calls are already linked to geographic calls and included in bundles.

4.89 We recognise that the proposed cap on 070 termination rates could impact providers using the range for alarm systems, auto-dialling services, and classified advertising. Such providers may need to consider which of the above models to adopt and, are likely to require time for providers to communicate any relevant messages to their customers, for whom they should already hold records. In this context we note that we have already observed migration of some providers from the 070 range. For example, we note that Auto Trader who once relied on 070 to mask advertisers' numbers, without charge, now offers end-users 03 numbers on the same terms (i.e. inclusive in the cost of the advertisement).

4.90 It is also our provisional view that the proposed charge control is unlikely to give rise to any adverse effects which are disproportionate to the aim of addressing the harms we have identified. We recognise that there may be a loss of customers for 070 numbers once charges are applied, as such customers reconsider the value of maintaining their 070 number. However, in an era of free mobile roaming across the EU and in many non-EU countries, it is our provisional view that it is appropriate for users of the range to consider its value to them, in light of the full costs of the service and having regard to other available options.

4.91 While any termination rate below the current levels is likely to reduce the impact of the charge on consumers to some extent, the optimal outcome is one that reduces excess revenue to a level that undermines the incentive to commit fraud, while encouraging retail prices to be aligned with mobile prices. We consider that the MTR achieves this, allowing for a reasonable estimate of cost recovery and minimising the risk of reducing the revenue for 070 TPCs below the point where an adjustment would be disproportionate. We also do not consider that the proposed cap impacts disproportionately on 070 TCPs, given the commensurate benefit in addressing the detrimental effects of SMP which these operators are currently able to exert.

Question 4.1: Do you consider that the cost of the proposed control is proportionate to the identified harm to consumers arising from this range? If not, please give your reasons.

Timetable for implementation

4.92 In addition, we have considered the time period within which we expect our proposed charge control to be implemented and seek views on that period. From our analysis, it is clear that there are several unavoidable factors which will dictate the implementation period needed to allow operate to accommodate changes to 070 termination rates:

- requesting and obtaining new numbers from different ranges;
- setting up new billing systems; and
- setting up/restructuring customer interface systems.

4.93 Providers who wish to retain their services on 070 numbers may adjust their business models after a cap is introduced as any loss of income will likely lead them to seek

alternative revenue streams. This may lead to investment in new services using different number ranges. Further, TCPs who choose to migrate their services to alternative ranges could require an equally lengthy, if not longer, time period in which to make changes to their services before remedies are implemented.

4.94 Moreover, before imposing the cap, end-users will need to be informed of any changes to their service, especially if this involves a migration to a new number range. We should therefore allow a reasonable period for such communications to be transmitted and responded to, plus any subsequent follow-up messages.

4.95 In addition to these basic considerations, it may be prudent to allow extra time to ensure 070 TCPs have adequate opportunity to change any marketing materials after acquiring new numbers and/or introducing charges. Taking these factors into account, we propose a period of three months for the full implementation of our proposed remedies on the 070 number range. We consider this would provide sufficient time for legitimate providers to acquire new numbers, migrate to another range, contact their customers, and arrange new commercial packages and/or charging systems.

Question 4.2: Do you agree with our proposal for a three-month implementation period? If not, please explain why.

Legal tests

4.96 Below we set out our considerations for how our proposals meet the relevant legal tests under the Act. A draft legal instrument can be found at Annex 5.

Sections 87 and 88 of the Act

4.97 Section 87(1) of the Act provides that, where Ofcom has made a determination that a person[103] has SMP in an identified services market,[104] Ofcom shall:

- set such SMP conditions authorised by that section as Ofcom considers appropriate to apply to that dominant provider in respect of the relevant network or relevant facilities; and
- apply those conditions to that person.

4.98 Section 87(9) of the Act authorises the setting of SMP conditions to impose on the dominant provider:

- such price controls as Ofcom may direct in relation to matters connected with the provision of network access to the relevant network, or with the availability of the relevant facilities;
- such rules as Ofcom may make in relation to those matters about the recovery of costs and cost orientation;

[103] In this case, the identified range holders.
[104] In this case, the termination of calls to 070 numbers.

- such rules as they may make for those purposes about the use of cost accounting systems; and
- obligations to adjust prices in accordance with such directions given by Ofcom as they may consider appropriate.

4.99 Section 88 of the Act states that Ofcom should not set an SMP condition falling within Section 87(9) except where:

- it appears from the market analysis that there is a relevant risk of adverse effects arising from price distortion; and
- it also appears that the setting of the condition is appropriate for the purposes of:
  - promoting efficiency;
  - promoting sustainable competition; and
  - conferring the greatest possible benefits on the end-users of public electronic communications services.

4.100 In setting a charge control, Section 88 also requires that we must take account of the extent of the investment in the matters to which the condition relates of the person to whom the condition is to apply.

4.101 In our opinion, our proposed charge control satisfies Section 88 of the Act. As discussed above, in light of our finding that the identified range holders have SMP in the termination of calls to 070 numbers, we are of the view that there exist adverse effects arising from price distortion by the identified range holders as they have the ability and incentive to maintain some or all of their prices for termination services to 070 numbers at an excessively high level. Further, for the reasons set out earlier, we also consider that our proposed control for termination to 070 numbers is appropriate for the purposes of promoting efficiency and sustainable competition, and conferring the greatest possible benefits on the end-users of public electronic communications services.

4.102 In proposing to impose our preferred charge control, we have also taken into account the need to ensure that telecoms providers have incentives to invest and innovate where it is efficient to do so.

Section 47 of the Act

4.103 Ofcom must also be satisfied that any SMP condition satisfies the test in Section 47(2) of the Act, namely that it is:

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

4.104 For the reasons set out below, we are satisfied that this test is met in relation to our proposed charge control.

Objective justification

4.105 We have set out in Section 3 our provisional determination that the identified 070 range holders each have SMP in the identified market covered by our proposed charge control. In the absence of any charge control on termination services in respect of 070 numbers, this would allow the identified range holders to continue to set charges unilaterally and excessively. This has adverse impacts on both competition and on consumer choice, price, quality, and value for money. Our view is that the identified range holders are unlikely to be incentivised to reduce their costs or set prices at the competitive level; indeed, we have observed that termination rates have not fallen for many years. Our proposed charge control has been designed to address this concern while allowing the identified range holders to recover their efficiently-incurred costs, including a reasonable return on investment.

4.106 Our proposed charge control is also objectively justifiable in that the benefits of 'incentive' (rather than 'rate of return') regulation are widely acknowledged as an effective mechanism to reduce prices in a situation where competition does not act to do so.

Undue discrimination

4.107 We are satisfied that our proposed charge control will not discriminate unduly against a particular person or particular persons because any telecoms provider will be able to access the services at the charge levels set by the condition. In addition, we do not consider that the proposed control discriminates unduly against the identified range holders as it is being imposed against all holders of 070 numbers.

Proportionality

4.108 For the reasons set out above in our Impact Assessment, it is our view that the proposed charge control is proportionate. In particular, our provisional view is that setting a charge control for terminating 070 calls at the same rate as the MTR is an effective remedy for addressing the harms we have identified. Further, having assessed the various options available, we have provisionally concluded that sharing the cost of 070 calls between the caller and the call recipient is the least onerous method of addressing these harms. Finally, a set out above, we do not consider that the proposed cap gives rise to adverse effects which are disproportionate to the aim of addressing the consumers harms we have identified. In particular, we do not consider that it impacts disproportionately on 070 TCPs, given the commensurate benefits in addressing the detrimental effects of SMP which these operators are currently able to exert.

Transparency

4.109 We consider that our proposed charge control is transparent in what it is intended to achieve. The aims and expected effect of the control is clear, and has been drafted to ensure maximum transparency.

Sections 3 and 4 of the Act

4.110 We also consider that the charge control is consistent with our duties under sections 3 and 4 of the Act (which implement Article 8 of the Framework Directive).

4.111 For the reasons set out above, we consider that the charge controls that we are proposing will, in particular, further the interests of citizens and consumers in relevant markets by the promotion of competition in line with section 3 of the Act. We have placed particular emphasis on the promotion of efficient competition, which we consider is likely to be the most effective way of furthering citizen and consumer interests in the relevant retail markets. In addition, we have taken into account further objectives, including ensuring that services are available at charges that are reasonably related to the efficient costs of supply (preferably as a result of effective competition) and investment and innovation.

4.112 Further, we have considered the Community requirements set out in section 4 of the Act. We consider that our proposals will promote competition in relation to the provision of electronic communications networks and encourage the provision of network access for the purposes of securing efficient and sustainable competition in the markets for electronic communications networks and services. In particular, we consider that the charge control will reduce excessive pricing by the identified 070 range holders and ensure that wholesale charges reflect efficiently incurred costs.

Question 4.3: Do you agree that our proposal to implement a charge control on 070 TCPs in the form of a benchmark rate is appropriate? If not, please explain why.

Summary of proposals

4.113 In the above sub-sections we have outlined our proposed remedies to address the competition issues arising out of 070 TCPs' individual SMP in the termination of calls to their allocated numbers. In this regard, we have assessed remedy options against our proposed regulatory framework and have proposed to set a maximum level for 070 termination rates equivalent to the MTRs proposed in our June 2017 MCT Consultation, which are LRIC-based.

Question 4.4: Do you have any further comment on our proposals for regulating 070 termination rates? Please provide reasons and evidence in support of your views.

A1. Responding to this consultation

How to respond

A1.1 Ofcom would like to receive views and comments on the issues raised in this document, by 5pm on 28 February 2018.

A1.2 We strongly prefer to receive responses via the online form at https://www.ofcom.org.uk/consultations-and-statements/category-1/review-070-number-range. We also provide a cover sheet https://www.ofcom.org.uk/consultations-and-statements/consultation-response-coversheet) for responses sent by email or post; please fill this in, as it helps us to maintain your confidentiality, and speeds up our work You do not need to do this if you respond using the online form.

A1.3 If your response is a large file, or has supporting charts, tables or other data, please email it to 070marketreview@ofcom.org.uk, as an attachment in Microsoft Word format, together with the cover sheet (https://www.ofcom.org.uk/consultations-and-statements/consultation-response-coversheet). This email address is for this consultation only, and will not be valid after 1 April 2018.

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

070 market review team

Competition Group
Ofcom
Riverside House
2A Southwark Bridge Road
London SE1 9HA

A1.5 If you would like to submit your response in an alternative format (e.g. a video or audio file), please contact markham.sivak@ofcom.org.uk.

A1.6 We do not need a paper copy of your response as well as an electronic version. We will acknowledge receipt if your response is submitted via the online web form, but not otherwise.

A1.7 You do not have to answer all the questions in the consultation if you do not have a view; a short response on just one point is fine. We also welcome joint responses.

A1.8 It would be helpful if your response could include direct answers to the questions asked in the consultation document. The questions are listed at Annex 4. It would also help if you could explain why you hold your views, and what you think the effect of Ofcom's proposals would be.

A1.9 If you want to discuss the issues and questions raised in this consultation, please contact markham.sivak@ofcom.org.uk.

Confidentiality

A1.10 Consultations are more effective if we publish the responses before the consultation period closes. In particular, this can help people and organisations with limited resources or familiarity with the issues to respond in a more informed way. So, in the interests of transparency and good regulatory practice, and because we believe it is important that everyone who is interested in an issue can see other respondents' views, we usually publish all responses on our website, www.ofcom.org.uk, as soon as we receive them.

A1.11 If you think your response should be kept confidential, please specify which part(s) this applies to, and explain why. Please send any confidential sections as a separate annex. If you want your name, address, other contact details or job title to remain confidential, please provide them only in the cover sheet, so that we don't have to edit your response.

A1.12 If someone asks us to keep part or all of a response confidential, we will treat this request seriously and try to respect it. But sometimes we will need to publish all responses, including those that are marked as confidential, in order to meet legal obligations.

A1.13 Please also note that copyright and all other intellectual property in responses will be assumed to be licensed to Ofcom to use. Ofcom's intellectual property rights are explained further at https://www.ofcom.org.uk/about-ofcom/website/terms-of-use.

Next steps

A1.14 Following this consultation period, Ofcom plans to publish a statement in 2018.

A1.15 If you wish, you can register to receive mail updates alerting you to new Ofcom publications; for more details please see https://www.ofcom.org.uk/about-ofcom/latest/email-updates.

Ofcom's consultation processes

A1.16 Ofcom aims to make responding to a consultation as easy as possible. For more information, please see our consultation principles in Annex 2.

A1.17 If you have any comments or suggestions on how we manage our consultations, please email us at consult@ofcom.org.uk. We particularly welcome ideas on how Ofcom could more effectively seek the views of groups or individuals, such as small businesses and residential consumers, who are less likely to give their opinions through a formal consultation.

A1.18 If you would like to discuss these issues, or Ofcom's consultation processes more generally, please contact Steve Gettings, Ofcom's consultation champion:

Steve Gettings
Ofcom
Riverside House
2a Southwark Bridge Road
London SE1 9HA
Email: corporationsecretary@ofcom.org.uk

A2. Ofcom's consultation principles

Ofcom has seven principles that it follows for every public written consultation

Before the consultation

A2.1 Wherever possible, we will hold informal talks with people and organisations before announcing a big consultation, to find out whether we are thinking along the right lines. 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

A2.2 We will be clear about whom we are consulting, why, on what questions and for how long.

A2.3 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 for people to give us a written response. If the consultation is complicated, we may provide a short Plain English / Cymraeg Clir guide, to help smaller organisations or individuals who would not otherwise be able to spare the time to share their views.

A2.4 We will consult for up to ten weeks, depending on the potential impact of our proposals.

A2.5 A person within Ofcom will be in charge of making sure we follow our own guidelines and aim to reach the largest possible number of people and organisations who may be interested in the outcome of our decisions. Ofcom's Consultation Champion is the main person to contact if you have views on the way we run our consultations.

A2.6 If we are not able to follow any of these seven principles, we will explain why.

After the consultation

A2.7 We think it is important that everyone who is interested in an issue can see other people's views, so we usually publish all the responses on our website as soon as we receive them. After the consultation we will make our decisions and publish a statement explaining what we are going to do, and why, showing how respondents' views helped to shape these decisions.

A3. Consultation coversheet

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)

A4. Consultation questions

Question 3.1: Do you agree with our provisional conclusion regarding market definition? Please provide reasons and evidence in support of your views.

Question 3.2: Do you agree with our provisional conclusion regarding SMP? Please provide reasons and evidence in support of your views.

Question 3.3: Do you agree with our provisional conclusion regarding SMP? Please provide reasons and evidence in support of your views.

Question 4.1: Do you consider that the cost of the proposed control is proportionate to the identified harm to consumers arising from this range? If not please give your reasons.

Question 4.2: Do you agree with our proposal for a three-month implementation period? If not, please explain why.

Question 4.3: Do you agree that our proposal to implement a charge control on 070 TCPs in the form of a benchmark rate is appropriate? If not, please explain why.

Question 4.4: Do you have any further comment on our proposals for regulating 070 termination rates? Please provide reasons and evidence in support of your views.

Question A9.1: Do you agree with our approach to estimating the cost of providing a 070 service? Please provide reasons and evidence in support of your views.

A5. Proposed SMP conditions

Draft legal instrument

PART I - NOTIFICATION OF PROPOSALS UNDER SECTION 48A(3) AND 80A(3) OF THE COMMUNICATIONS ACT 2003

Proposals for identifying markets, making market power determinations and setting SMP services conditions in relation to each of the persons named in Schedule 1 to this Notification under section 45 of the Communications Act 2003

Background

A5.1 Ofcom is today publishing a consultation document entitled *Personal Numbering - Review of the 070 Number Range* setting out Ofcom's proposals to identify markets, make market power determinations and set an SMP condition for the period from [to be determined, allowing for a three-month implementation period] to 31 March 2021.

Proposals for service market identifications and market power determinations

A5.2 Ofcom is proposing to identify 126 separate markets as described below for the purpose of making a market power determination.

A5.3 The markets that Ofcom is proposing to identify are the markets for wholesale 070 call termination services that are provided by each of those 126 persons named in Schedule 1 to this notification to another communications provider, for the termination of voice calls to 070 numbers[105] within the range which has been allocated to that person by Ofcom, for which that person is able to set the call termination rate (each a "relevant market").

A5.4 Ofcom is proposing to make a market power determination that each of the persons set out in Schedule 1 to this notification has significant market power in relation to the relevant market in which that provider operates. As specified in Schedule 1, for each of the persons identified under that Schedule, the SMP designation holds with respect to the registered company identified and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 1159 of the Companies Act 2006, in so far as they operate in the relevant market.

[105] These are the numbers included in the number range designated for “personal services”, as defined in the National Telephone Numbering Plan (which is available at http://stakeholders.ofcom.org.uk/telecoms/numbering/). In the current Numbering Plan, these are numbers beginning 070.

A5.5 The effect of, and Ofcom's reasons for making, the proposals for identifying the markets and making the market power determinations referred to above are set out in the consultation document accompanying this notification.

Proposals to set SMP service conditions

A5.6 Ofcom is proposing to set the following SMP condition M1 as set out in Schedule 2 to this notification on each person listed in Schedule 1.

A5.7 Ofcom is proposing that that SMP condition shall apply, in the case of each person on whom they are set, in respect of the relevant market in which that person operates.

A5.8 Unless otherwise stated in Schedule 1 to this notification, the SMP condition that Ofcom is proposing shall take effect from the date of the notification under sections 48(1) and 79(4) of the Communications Act 2003 (the "Act") adopting the proposals set out in this notification and shall have effect until the publication of a notification under section 48(1) of the Act revoking such conditions.

A5.9 The effect of, and Ofcom's reasons for making, the proposals referred to above are contained in the consultation accompanying this notification.

Ofcom's duties and legal tests

A5.10 In identifying and analysing the markets referred to in this notification, and in considering whether to make the corresponding proposals set out in this notification, Ofcom has, in accordance with section 79 of the Act, taken due account of all applicable guidelines and recommendations which have been issued or made by the European Commission in pursuance of the provisions of a European Union instrument, and which relate to market identification and analysis or the determination of what constitutes significant market power.

A5.11 Ofcom considers that the proposed SMP condition set out in Schedule 2 comply with the requirements of sections 45 to 47, 87 and 88 of the Act, as appropriate and relevant to that SMP condition.

A5.12 In making all of the proposals referred to in this notification, Ofcom has also considered and acted in accordance with its general duties set out in section 3 of the Act and the six Community requirements set out in section 4 of the Act. In accordance with section 4A of the Act, Ofcom has also taken due account of all applicable recommendations issued by the European Commission under Article 19(1) of the Framework Directive. In doing so, pursuant to Article 3(3) of Regulation (EC) No. 1211/2009, Ofcom has also taken utmost account of any relevant opinion, recommendation, guidance advice or regulatory practice adopted by BEREC.

Making representations

A5.13 Representations may be made to Ofcom about any of the proposals set out in this notification and in the accompanying consultation document by no later than 28 February 2018.

Notification to the Secretary of State

A5.14 Copies of this notification and the accompanying explanatory statement have been sent to the Secretary of State in accordance with sections 48C(1) and 81(1) of the Act.

Interpretation

A5.15 For the purpose of interpreting this notification -

a) except in so far as the context otherwise requires or as otherwise defined in this notification, words or expressions used shall have the same meaning as it has in the Act;

b) headings and titles shall be disregarded;

c) expressions cognate with those referred to in this notification shall be construed accordingly; and

d) the Interpretation Act 1978 (c. 30) shall apply as if this notification were an Act of Parliament.

A5.16 The Schedules to this Notification shall form part of this Notification.

Signed

Brian Potterill

Competition Policy Director

A person authorised by OFCOM under paragraph 18 of the Schedule to the Office of Communications Act 2002

[insert date of publication]

Schedule 1

For each of the persons identified below, the SMP designation holds with respect to the registered company identified and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 1159 of the Companies Act 2006, in so far as they operate on the relevant market.

1. (aq) Limited trading as aql Limited, whose registered company number is 03663860 and registered address is 13-15 Hunslet Road, Leeds, LS10 1JQ;
2. 24 Seven Communications Limited, whose registered company number is 04468566 and registered address is Novis & Co Chartered Accountants, 1 Victoria Court Bank Square, Morley Leeds, West Yorkshire, LS27 9SE;
3. 2-Sell-It Limited, whose registered company number is 05546732 and registered address is Cara House 1 Tudor Enterprise Park, Tudor Road, Harrow, Middlesex, HA3 5JQ;
4. 4D Interactive Limited, whose registered company number is 02676756 and registered address is Lu.405 The Light Bulb, Filament Walk, London, England, SW18 4GQ;
5. A2B Telecom Limited, whose registered company number is 05487342 and registered address is 85 Great Portland Street, First Floor, London, England, W1W 7LT;
6. Affiniti Integrated Solutions Limited, whose registered company number is 02817039 and registered address is 37 Carr Lane, Hull, East Yorkshire, HU1 3RE;
7. Assume Nothing Limited, whose registered company number is 05037171 and registered address is 19 Kenyon Street, Birmingham, England, B18 6AR;
8. Atlas Interactive Group Limited, whose registered company number is 03249486 and registered address is Suite 2.3 78 Buckingham Gate, London, England, SW1E 6PE;
9. B4U Telecom Limited, whose registered company number is 03469971 and registered address is 95 Broad Street, Birmingham, England, B15 1AU;
10. Barritec Limited, whose registered company number is 03636926 and registered address is Room G15/16, Building 3 Riverside Way, Watchmoor Park, Camberley, Surrey, GU15 3YL;
11. Business Broadcast Communications Limited, whose registered company number is 06949556 and registered address is 5300 Lakeside, Cheadle Royal Business Park, Cheadle, Cheshire, SK8 3GP;
12. Call Telecom Limited, whose registered company number is 01720546 and registered address is 90 Blunden Drive, Slough, SL3 8WQ;
13. CFL Communications Limited, whose registered company number is 04419749 and registered address is Abbey House, 25 Clarendon Road, Redhill, Surrey, England, RH1 1QZ;
14. Citrus Telecommunications Limited, whose registered company number is 03517870 and registered address is Second Floor, 99 Holdenhurst Road, Bournemouth, Dorset, BH8 8DY;

15. COLT Technology Services, whose registered company number is 02452736 and registered address is Colt House, 20 Great Eastern Street, London, England, EC2A 3EH;

16. Commi Holdings Limited, whose registered company number is 10010319 and registered address is Overdene House, 49 Church Street, Theale, Reading, Berkshire, United Kingdom, RG7 5BX;

17. Connect Telecom UK Limited, whose registered company number is 04198443 and registered address is 1 The Green, Richmond, England, TW9 1PL;

18. Core Telecom Limited, whose registered company number is 05332008 and registered address is Mazhar House 48 Bradford Road Stanningley, Leeds, West Yorkshire, LS28 6DD;

19. Coretx Communications Limited, whose registered company number is 05402754 and registered address is Rutland House 44 Masons Hill, Bromley, BR2 9JG;

20. Daisy Communications Limited, whose registered company number is 04145329 and registered address is Daisy House, Lindred Road Business Park, Nelson, Lancashire, BB9 5SR;

21. Daotec Limited, whose registered company number is 04296038 and registered address is Westbury 2nd Floor, 145-157 St John Street, London, EC1V 4PY;

22. Digital Mail Limited, whose registered company number is 02661078 and registered address is Tabernacle Court, 16-28 Tabernacle Street, London, England, EC2A 4DD;

23. Digital Select Limited, whose registered company number is 06481372 and registered address is Rowan House, 28 Queens Road, Hethersett, Norfolk, NR9 3DB;

24. Digitech Solutions Global Limited, whose registered company number is 05821246 and registered address is The Business Centre, Unit 1 Finway, Luton, LU1 1TR;

25. Dynamic Mobile Billing Limited, whose registered company number is 03383285 and registered address is 12th Floor Lyndon House 58-62 Hagley Road, Birmingham, B16 8PE;

26. ETC Telecom Limited, whose registered company number is 06295193 and registered address is 124 Livery Street, Birmingham, West Midlands, B3 1RS;

27. Everything Voip Limited, whose registered company number is 08901482 and registered address is Suite 3 12 Princess Street, Knutsford, Cheshire, England, WA16 6DD;

28. FEBO Telecom Limited, whose registered company number is 303614 (Cyprus) and registered address is Office 602, 6th floor, Apollo Court, 232 Arch, Makariou III Ave, Limassol, 3030, Cyprus;

29. Firstsound Limited, whose registered company number is 02845928 and registered address is 140 Rayne Road, Braintree, England, CM7 2QR;

30. FleXtel Limited, whose registered company number is 02772380 and registered address is Griffins Court, 24-32 London Road, Newbury, Berkshire, RG14 1JX;

31. Franzcom Limited, whose registered company number is 09386992 and registered address is Unit 22 Callywith Gate Industrial Estate, Launceston Road, Bodmin, Cornwall, United Kingdom, PL31 2RQ;

32. Game Network BV, whose registered company number is 34260590 and registered address is Prinseneiland 79 N, Amsterdam, 1013 LM, Netherlands;a

33. Gamma Telecom Holdings Limited, whose registered company number is 04287779 and registered address is 5 Fleet Place, London, EC4M 7RD;

34. GCI Network Solutions Limited, whose registered company number is 04082862 and registered address is Global House, Crofton Close, Lincoln, Lincolnshire, LN3 4NT;

35. Hospedia Limited, whose registered company number is 02841021 and registered address is Landmark Place, 1-5 Windsor Road, Slough, Berkshire, SL1 2EJ;

36. Hutchison 3G UK Limited, whose registered company number is 03885486 and registered address is Star House, 20 Grenfell Road, Maidenhead, Berkshire, SL6 1EH;

37. I.T Communications Limited, whose registered company number is 07418692 and registered address is The Seedbed Business Centre, Vanguard Way, Shoeburyness, Essex, SS3 9QY;

38. i-Net Communications Group Plc, whose registered company number is 04036526 and registered address is C/O H W Fisher Limited, Acre House, 11-15 William Road, London, NW1 3ER;

39. Invoco Limited, whose registered company number is 04465219 and registered address is 11 Avalon Road, Bromsgrove, Worcestershire, B60 2RJ;

40. IP Phone Solutions Limited; whose registered company number is 06681608 and registered address is Labyrinth Lodge Long Lane, Walton, Liverpool, England, L9 7AA;

41. IPV6 Limited, whose registered company number is 06711525 and registered address is Berrycentre, Chiltern Drive, Surbiton, Surrey, KT5 8LS;

42. IV Response Limited, whose registered company number is 04318927 and registered address is 57-61 Mortimer Street, London, W1W 8HS;

43. JT (Jersey) Limited, whose registered company number is 83487 (Jersey) and registered address is No1 The Forum, Grenville Street, St Helier, Jersey, JE4 8PB;

44. Jtec UK Limited, whose registered company number is 05054246 and registered address is 15 Hunts Mill, Crispin Place, Wallingford, Oxfordshire, OX10 0DR;

45. Level 3 Communications UK Limited, whose registered company number is 02495998 and registered address is 7th Floor 10 Fleet Place, London, EC4M 7RB;

46. Linear Telecoms Limited, whose registered company number is 06917811 and registered address is 11c Beecroft Road, London, United Kingdom, SE4 2BS;

47. M P Tanner Limited t/a FIO Telecom, whose registered company number is 05799561 and registered address is Dalton House, 60 Windsor Avenue, London, SW19 2RR;

48. M247 Limited, whose registered company number is 04968341 and registered address is 1 Ball Green, Cobra Court, Manchester, M32 0QT;

49. Magrathea Telecommunications Limited, whose registered company number is 04260485 and registered address is Unit 5 Commerce Park, Brunel Road, Theale, Reading, RG7 4AB;

50. Marathon Telecom Limited, whose registered company number is 93007 (Jersey) and registered address is 28 Halkett Place, St Helier, Jersey, JE2 4WG;

51. Mars Communications Limited, whose registered company number is 06478834 and registered address is Forest House, Forest Road, Ilford, Essex, IG6 3HJ;

52. Maxadie Limited, whose registered company number is 08320797 and registered address is 2 Church Street, Burnham, Slough, England, SL1 7HZ;

53. Media Telecom Limited, whose registered company number is 07126854 and registered address is 123 Hagley Road, Edgbaston, Birmingham, West Midlands, B16 8LD;

54. Mi Telecom Limited, whose registered company number is 02668468 and registered address is 14 Hemmells Laindon, Basildon, Essex, SS15 6ED;

55. Mintaka Limited, whose registered company number is 07064805 and registered address is 2 More London Riverside, London, SE1 2AP;

56. Mobile FX Services Limited, whose registered company number is 6028074 and registered address is 49 Greek Street, London, W1D 4EG;

57. Nationwide Telephone Assistance Limited, whose registered company number is 04315226 and registered address is Ivy Lodge Farm 179 Shepherds Hill, Harold Wood, Romford, Essex, RM3 0NR;

58. Net Solutions Europe Limited, whose registered company number is 03203624 and registered address is Mandeville House 62 The Broadway, London Road, Amersham, Buckinghamshire, United Kingdom, HP7 0HJ;

59. Nexus Telecommunications Limited, whose registered company number is 03895766 and registered address is Dawson House Matrix Office Park, Buckshaw Village, Chorley, Lancashire, United Kingdom, PR7 7NA;

60. Nodemax Limited, whose registered company number is 06127089 and registered address is 75 Springfield Road, Chelmsford, Essex, CM2 6JB;

61. Numbergroup Network Limited, whose registered company number is 07390438 and registered address is 207 Regent Street, London, United Kingdom, W1B 3HH;

62. Numbers Plus Limited, whose registered company number is 07611130 and registered address is Manor Coach House, Bristol Road, Keynsham, BS31 2BB;

63. Numbers Telecom Limited, whose registered company number is 07936388 and registered address is 43 Berkeley Square, Mayfair, London, W1J 5FJ;

64. One Network Limited, whose registered company number is 07549614 and registered address is 32 Hamstead Hall Avenue, Handsworth Wood, Birmingham, West Midlands, B20 1EY;

65. PageOne Communications Limited, whose registered company number is 04560277 and registered address is 17 Rochester Row, London, SW1P 1QT;

66. Phone Buddy Limited, whose registered company number is 04171159 and registered address is 20 Coxon Street, Spondon, Derby, Derbyshire, DE21 7JG;

67. Phone Co-Op Numbering Limited, whose registered company number is 07432108 and registered address is 5 Millhouse Elmsfield Business Centre, Worcester Road, Chipping Norton, Oxon, OX7 5XL;

68. Plus Telecom Limited, whose registered company number is 04052436 and registered address is 17-18 Margaret Street 3rd Floor, London, W1W 8RP;

69. Port 5060 Limited, whose registered company number is 08332891 and registered address is Unit 25 President Buildings, Savile Street East, Sheffield, S4 7UQ;

70. Premier Voicemail Limited, whose registered company number is 03172426 and registered address is Profex House, 25 School Lane, Bushey, Hertfordshire, WD23 1SS;

71. Promotions4All Limited, whose registered company number is 07046038 and registered address is 19 Kenyon Street, Birmingham, B18 6AR;

72. QX Telecom Limited, whose registered company number is 03820728 and registered address is 2 Glenmore Close, Thatcham, Berkshire, RG19 3XR;

73. Reality Network Services Limited, whose registered company number is 04267969 and registered address is Morcott Old Rectory Drive, Eastergate, Chichester, West Sussex, England, PO20 3XH;

74. Red Squared Limited, whose registered company number is 383037 and registered address is First Floor Office Suite 9/11 Baggot Street Upper Dublin 4;

75. Red Telecom Solutions Limited, whose registered company number is 08902433 and registered address is Alex House, 260/8 Chapel Street, Salford, M3 5JZ;

76. Redcentric Solutions Limited, whose registered company number is 08322856 and registered address is Central House, Beckwith Knowle, Harrogate, North Yorkshire, HG3 1UG;

77. Relax Telecom Limited, whose registered company number is 06777698 and registered address is Suite 5 Marple House 39 Stockport Road, Marple, Stockport, Cheshire, England, SK6 6BD;

78. Sala Limited, whose registered company number is 03617973 and registered address is 121 Edgware Road, London, W2 2HX;

79. Sentiro (UK) Limited, whose registered company number is 06329599 and registered address is 22 The Quadrant, Richmond, Surrey, United Kingdom, TW9 1BP;

80. Served Up Limited, whose registered company number is 04555918 and registered address is 3 Centro, Boundary Way, Hemel Hempstead, Hertfordshire, HP2 7SU;

81. Simwood eSMS Limited, whose registered company number is 03379831 and registered address is C/O Hw Chartered Accountants Keepers Lane, The Wergs, Wolverhampton, WV6 8UA;

82. SOS Technology Limited, whose registered company number is 06822088 and registered address is Unit 2 Charnwood House Marsh Road, Ashton, Bristol, BS3 2NA;

83. Sound Advertising Limited, whose registered company number is 03218628 and registered address is Aston House, Cornwall Avenue, London, N3 1LF;

84. Spacetel UK Limited, whose registered company number is 03036383 and registered address is 790 Uxbridge Road, Hayes, Middlesex, UB4 0RS;

85. SPT Worldwide Limited, whose registered company number is 07302015 and registered address is Wye Lodge, 66 High Street, Old Stevenage, Hertfordshire, SG1 3EA;

86. Square1 Communications Limited, whose registered company number is 04541344 and registered address is Wessex House, Station Road, Westbury, Wiltshire, BA13 3JN;

87. Supported Business Limited, whose registered company number is 08254365 and registered address is 152 City Road, London, England, EC1V 2NX;

88. Suretec Systems Limited, whose registered company number is SC258005 and registered address is 24 Cormack Park, Rothienorman, Inverurie, Aberdeenshire, AB51 8GL;

89. Swiftel Limited, whose registered company number is 08159601 and registered address is 73 Francis Road, Edgbaston, Birmingham, B16 8SP;

90. Swiftnet Limited, whose registered company number is 02469394 and registered address is 1st Floor, Olympia House 1 Armitage Road, Golders Green, London, England, NW11 8RQ;

91. Syntec Limited, whose registered company number is 03529985 and registered address is 18 The Avenue, London, W13 8PH;

92. Tabsoft Limited, whose registered company number is 05846429 and registered address is 75 Springfield Road, Chelmsford, Essex, CM2 6JB;

93. TalkTalk Communications Limited, whose registered company number is 03849133 and registered address is 11 Evesham Street, London, W11 4AR;

94. Telappliant Limited, whose registered company number is 04632756 and registered address is 3 Harbour Exchange Square, London, England, E14 9G;

95. Telecom 10 Limited, whose registered company number is 06974505 and registered address is 3a Station Road, Cippenham, Slough, SL1 6JJ;

96. Telecom Essex Limited, whose registered company number is 05578905 and registered address is Second Floor, Kestrel House Falconry Court, Bakers Lane, Epping, Essex, England, CM16 5BD;

97. Telecom2 Limited, whose registered company number is 06926334 and registered address is Cotswold House, 219 Marsh Wall, London, England, E14 9FJ;

98. TelecomIQ Limited, whose registered company number is 08561455 and registered address is Upper Level Turnbridge Mills, Quay Street, Huddersfield, West Yorkshire, HD1 6QT;

99. Telecoms Cloud Networks Limited, whose registered company number is 09071980 and registered address is 22 Studio F, Jordan Street, Liverpool, England, L1 0BP;

100. Telecoms World Plc, whose registered company number is 03576847 and registered address is Unit 2, Kingfisher House Crayfields Business Park, New Mill Road, Orpington, Kent, BR5 3QG;

101. Teledesign Limited, whose registered company number is 03254784 and registered address is Keelings Broad House, The Broadway, Old Hatfield, Herts, AL9 5BG;

102. Telefonica UK Limited, whose registered company number is 01743099 and registered address is 260 Bath Road, Slough, Berkshire, SL1 4DX;

103. TeleMagic Limited, whose registered company number is 07390681 and registered address is 44a Stepney Street, Llanelli, SA15 3TR;

104. Telemix Limited, whose registered company number is 05245040 and registered address is Aston House, Cornwall Avenue, London, N3 1LF;

105. Telephone Box Limited, whose registered company number is 07198723 and registered address is Berrycentre, Berrylands, KT5 8LS;

106. TeleSurf Limited, whose registered company number is 06427905 and registered address is Suite 1, 3rd Floor, 11-12 St. James's Square, London, England, SW1Y 4LB;

107. Telency Limited, whose registered company number is 02312314 and registered address is 6 Manor Court, 4 Barnes Wallis Road, Fareham, Hampshire, England, PO15 5TH;

108. TelXL Limited, whose registered company number is 04249562 and registered address is Unit 3, Centech Park Fringe Meadow Road, Moons Moat North Industrial Estate, Redditch, Worcestershire, England, B98 9NR;

109. TGL Services (UK) Limited, whose registered company number is 09293520 and registered address is 32 St. James's Street, London, SW1A 1HD;

110. Tiscali UK Limited, whose registered company number is 03408171 and registered address is 11 Evesham Street, London, W11 4AR;

111. Tismi BV, whose registered company number is 32081827 (Netherlands) and registered address is Dorpsstraat 3981 EA Bunnik Netherlands;

112. Top Gear Media Limited, whose registered company number is 07676479 and registered address is Upper Level Turnbridge Mills, Quay Street, Huddersfield, West Yorkshire, England, HD1 6QT;

113. TTNC Limited, whose registered company number is 05256607 and registered address is Unit 10 101 Lower Anchor Street, Chelmsford, Essex, CM2 0AU;

114. Twelve Telecom Limited, whose registered company number is 07846351 and registered address is Pentax House South Hill Avenue, South Harrow, Harrow, England, HA2 0DU;

115. UK Number Store Limited, whose registered company number is 02883497 and registered address is 27 Frederick Street, Birmingham, B1 3HH;

116. Virtual Talk Limited, whose registered company number is 04890632 and registered address is Calder & Co, 16 Charles Ii Street, London, SW1Y 4NW;

117. Visionate, whose registered company number is 03899265 and registered address is Longwood, Hill Brow, Liss, Hampshire, GU33 7PB;

118. Vodafone Business Solutions Limited, whose registered company number is 02186565 and registered address is Vodafone House, The Connection, Newbury, Berkshire, RG14 2FN;

119. Vodafone Limited, whose registered company number is 01471587 and registered address is Vodafone House, The Connection, Newbury, Berkshire, RG14 2FN;

120. Vodafone UK Limited, whose registered company number is 02227940 and registered address is Vodafone House, The Connection, Newbury, Berkshire, RG14 2FN;

121. Voice Simplified Limited, whose registered company number is 07171825 and registered address is Curzon House 2nd Floor, 24 High Street, Banstead, Surrey, SM7 2LJ;

122. Voicetec Systems Limited, whose registered company number is 03948745 and registered address is 46 West Drayton Park Avenue, West Drayton, Middlesex, UB7 7QB;

123. Wavecrest (UK) Limited, whose registered company number is 03042254 and registered address is 1st Floor Bishopsgate Court, 4-12 Norton Folgate, London, E1 6DB;

124. Windsor Telecom Plc, whose registered company number is 03752620 and registered address is Wey Court West, Union Road, Farnham, Surrey, GU9 7PT;

125. XoverX Limited, whose registered company number is 08319701 and registered address is 46 Ilford Hill, Ilford, Essex, IG1 2AT;

126. Zestel Limited, whose registered company number is 08235267 and registered address is 20-22 Wenlock Road, London, England, N1 7GU.

Schedule 2

The SMP Condition

Part 1: Commencement

1. The SMP condition in Part 3 of this Schedule 2 applies from [to be determined, allowing for a three-month implementation period].

Part 2: Definitions and interpretation

2. In this Schedule -

"Call" means a voice call which originates on a public electronic communications network (whether fixed or mobile) and is terminated to a telephone number staring with the prefix '070' within a number range allocated by Ofcom to a Dominant Provider;

"Call Termination Charge" means the pence per minute charge made by a Dominant Provider for terminating a 070 Call;

"Controlling Percentage" means -

a) in relation to the Second Relevant Period, the amount of change in the Consumer Prices Index in the period of twelve months ending on the 31 December immediately before the beginning of that Relevant Period, expressed as a percentage (rounded to one decimal place) of that Consumer Prices Index as at the beginning of that period; reduced by 4.1%; and

b) in relation to the Third Relevant Period, the amount of change in the Consumer Prices Index in the period of twelve months ending on the 31 December immediately before the beginning of that Relevant Period, expressed as a percentage (rounded to one decimal place) of that Consumer Prices Index as at the beginning of that period; reduced by 3.7%

"Consumer Prices Index" means the index of consumer prices compiled by an agency or a public body on behalf of Her Majesty's Government or a government department (which is the Office for National Statistics at the time of publication of this Notification) from time to time in respect of all items;

"Dominant Provider" means a person listed in Schedule 1 of this notification;

"Ofcom" means the Office of Communications;

"pence per minute" means the sum in pence charged for a minute of a Call;

"Relevant Period" means any of the following:

c) the period of [to be confirmed] months beginning on [to be determined, allowing for a three-month implementation period] and ending on 31 March 2019 (the "First Relevant Period");

d) the period of twelve months beginning on 1 April 2019 and ending on 31 March 2020 (the "Second Relevant Period"); and

e) the period of twelve months beginning on 1 April 2020 and ending on 31 March 2021 (the "Third Relevant Period").

"Third Party" means a person operating a public electronic communications network.

3. For the purpose of interpreting the conditions in Part 3 of this Schedule -

(a) Except in so far as the context otherwise requires, words or expressions shall have the meaning ascribed to them in paragraph 1 of this Part above and otherwise any word or expression shall have the same meaning as it has in the Communications Act 2003;

(b) the Interpretation Act 1978 shall apply as if each of the SMP conditions were an Act of Parliament (c. 30); and

(c) headings and titles shall be disregarded.

Part 3: SMP condition

Condition M1 - Control of Call Termination Charge

M1.1 The Dominant Provider shall ensure that for each Call on any day, during the Relevant Period, the Call Termination Charge (which shall be expressed in pence per minute) does not exceed the charge ceiling.

M1.2 The charge ceiling is -

(a) for any Call on a day in the First Relevant Period, 0.493 pence per minute;

(b) for any Call on a day in the Second Relevant Period and Third Relevant Period -

a. an amount equal to -

i) the charge ceiling, expressed in pence per minute (rounded to three decimal places), in the Relevant Period preceding the Relevant Period in which the Call was made; multiplied by,

ii) the sum of 100 per cent and the Controlling Percentage for the Relevant Period in which the Call was made, and is

b. expressed as being pence per minute and rounded to three decimal places.

M1.3 Without prejudice to Ofcom's statutory information gathering powers, the Dominant Provider shall provide to Ofcom in writing any information reasonably required by Ofcom for the Dominant Provider to demonstrate compliance with this condition at any time upon reasonable notice.

M1.4 This condition M1 applies to the persons named in Schedule 1 of this notification.

A6. The regulatory framework

Introduction

A6.1 This Annex provides an overview of the market review process, to give some additional context to, and understanding of, the matters discussed in the main body of this document and the draft legal instrument (statutory notifications) published at Annex 5.

A6.2 Market review regulation is technical and complex, including the legislation and the recommendations and guidelines that we need to consider as part of the process. There may be many relevant documents depending on the market and/or issues in question. This overview does not purport to give a full and exhaustive account of all such materials that we have considered in reaching our preliminary views in these markets. Key aspects of materials relevant to this market review are, however, discussed in this document.

Market review concept

A6.3 The concept of a market review refers to procedures under which we, at regular intervals, identify relevant markets appropriate to national circumstances, carry out analyses of these markets to determine whether they are effectively competitive and then decide on appropriate remedies (known as Significant Market Power (SMP) obligations or conditions). We explain the concept of SMP below.

A6.4 In carrying out this work, we act in our capacity as the independent sectoral regulator for the United Kingdom communications industry. Our functions in this regard are to be found in Part 2 of the Communications Act 2003 (the Act)[106]. We exercise those functions within the framework harmonised across the European Union for the regulation of electronic communications by the Member States (known as the Common Regulatory Framework or the CRF), as transposed by the Act. The applicable rules[107] are contained in a package of five EC Directives, of which two Directives are immediately relevant for these purposes, namely:

- Directive 2002/21/EC on a common regulatory framework for electronic communications networks and services (the Framework Directive); and
- Directive 2002/19/EC on access to, and interconnection of, electronic communications networks and associated facilities (the Access Directive).

A6.5 The Directives require that National Regulatory Authorities ('NRAs'), such as Ofcom, carry out reviews of competition in communications markets to ensure that SMP regulation remains appropriate and proportionate in the light of changing market conditions.

A6.6 Each market review normally has three stages, namely:

[106] http://www.legislation.gov.uk/ukpga/2003/21/contents

[107] The Directives have been reviewed and amendments were adopted on 19 December 2009. The amendments have been transposed into the national legislation and applied with effect from 26 May 2011.

- the identification and definition of the relevant markets (the market definition procedure);
- the assessment of competition in each market, in particular whether the relevant market is effectively competitive (the market analysis procedure); and
- the assessment of appropriate regulatory obligations (the remedies procedure).

A6.7 These stages are normally carried out together.

Market definition procedure

A6.8 The Act provides that, before making a market power determination,[108] we must identify (by reference, in particular, to area and locality) the market which, in our opinion, given the circumstances of the United Kingdom, is the market in relation to which it is appropriate to consider making such a determination and to analyse that market.

A6.9 The Framework Directive requires that NRAs shall, taking the utmost account of the "2014 EC Recommendation"[109] and "SMP Guidelines"[110] published by the EC, define the relevant markets appropriate to national circumstances, in particular relevant geographic markets within their territory, in accordance with the principles of competition law.

A6.10 The 2014 EC Recommendation identifies a set of product and service markets within the electronic communications sector in which ex-ante regulation may be warranted. Its purpose is twofold. First, seeking to achieve harmonisation across the single market by ensuring that the same markets will be subject to a market analysis in all Member States. Secondly, providing legal certainty by making market players aware in advance of the markets to be analysed.

A6.11 However, NRAs are able to regulate markets that differ from those identified in the 2014 EC Recommendation where this is justified by national circumstances taking account of the three cumulative criteria referred to in the 2014 EC Recommendation (the "three-criteria test") and where the EC does not raise any objections.

A6.12 Under the three-criteria test, when identifying markets other than those set out in the Recommendation, the NRA needs to ensure that each of the following three criteria are cumulatively met:

a) the presence of high and non-transitory barriers to entry. These may be of a structural, legal or regulatory nature;

[108] The market power determination concept is used in the Act to refer to a determination that a person has SMP in an identified services market.
[109] Commission Recommendation of 9 October 2014 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communication networks and services (2014/710/EU) available at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014H0710
[110] Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services (2002/C 165/03), 11 July 2002. Available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2002:165:0006:0031:EN:PDF

b) a market structure which does not tend towards effective competition within the relevant time horizon. The application of this criterion involves examining the state of competition behind the barriers to entry; and

c) the insufficiency of competition law alone to adequately address the market failure(s) concerned.

A6.13 The fact that an NRA identifies the product and services markets listed in the 2014 EC Recommendation or identifies other product and services markets that meet the three-criteria test does not automatically mean that regulation is warranted. Market definition is not an end in itself but rather a means of assessing effective competition. The three-criteria test is also different from the SMP assessment because the test's focus is on the general structure and market characteristics.

A6.14 The relationship between the market definition identified in this review and those listed in the 2014 EC Recommendation is discussed in relevant parts of this Consultation.[111]

A6.15 The SMP Guidelines make clear that market definition is not a mechanical or abstract process. It requires an analysis of any available evidence of past market behaviour and an overall understanding of the mechanics of a given sector. As market analyses have to be forward-looking, the Guidelines state that NRAs should determine whether the market is prospectively competitive, and thus whether any lack of effective competition is durable, by taking into account expected or foreseeable market developments over the course of a reasonable period. They clarify that NRAs enjoy discretionary powers that reflect the complexity of all the relevant factors that must be assessed (economic, factual and legal) when identifying the relevant market, and assessing whether an undertaking has SMP.

A6.16 The SMP Guidelines also describe how competition law principles may be used by NRAs in their analyses. In particular, there are two dimensions to the definition of a relevant market: the relevant products to be included in the same market and the geographic extent of the market. Ofcom's approach to market definition follows that used by the United Kingdom competition authorities, which is in line with the approaches adopted by the EC.

A6.17 While such principles are being used in identifying the ex-ante markets, they will not necessarily be identical to markets defined in individual competition law cases. This may be the case, especially as the ex-ante markets are based on an overall forward-looking assessment of the structure and the functioning of the market under examination. Accordingly, the economic analysis carried out for the purpose of this review, including the identified markets, is without prejudice to any analysis that may be carried out in relation to any investigation pursuant to the Competition Act 1998[112] (relating to the application of

[111] See, in particular, where we set out how we consider the three criteria test is cumulatively satisfied for the relevant market which is not included in the 2014 EC Recommendation, but for which we have concluded is a market in which ex ante regulation is warranted

[112] http://www.legislation.gov.uk/ukpga/1998/41/contents

the Chapter I or II prohibitions or Article 101 or 102 of the Treaty on the Functioning of the European Union[113]) or the Enterprise Act 2002.[114]

Market analysis procedure

Effective competition

A6.18 The Act requires that we carry out market analyses of identified markets for the purpose of making or reviewing market power determinations. Such analyses are normally to be carried out within 2 years from the adoption of a revised recommendation on markets, where such recommendation identifies a market not previously notified to the EC, or within 3 years from the publication of a previous market power determination relating to that market.

A6.19 In carrying out a market analysis, the key issue for an NRA is to determine whether the market in question is effectively competitive. The 27th recital to the Framework Directive clarifies the meaning of that concept. Namely, "[it] is essential that ex-ante regulatory obligations should be imposed only where there is not effective competition, i.e. in markets where there are one or more undertakings with significant market power, and where national and Community competition law remedies are not sufficient to address the problem".

A6.20 The definition of SMP is equivalent to the concept of dominance as defined in competition law. In essence, it means that Ofcom needs to determine whether any undertaking in the relevant market is in a position of economic strength affording it the power to behave to an appreciable extent independently of competitors, customers, and ultimately consumers. This is provided for by Article 14 of the Framework Directive as implemented by section 78 of the Act. The Framework Directive requires, however, that NRAs must carry out the market analysis taking the utmost account of the SMP Guidelines. The latter emphasise that NRAs should undertake a thorough and overall analysis of the economic characteristics of the relevant market before coming to a conclusion as to the existence of significant market power.

A6.21 In that regard, the SMP Guidelines set out, additionally to market shares, a number of criteria that can be used by NRAs to measure the power of an undertaking to behave to an appreciable extent independently of its competitors, customers and consumers, including:

a) overall size of the undertaking;

b) control of infrastructure not easily duplicated;

c) technological advantages or superiority;

d) absence of or low countervailing buying power;

[113] Previously Article 81 and Article 82 of the EC Treaty, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:083:FULL:EN:PDF
[114] http://www.legislation.gov.uk/ukpga/2002/40/contents

e) easy or privileged access to capital markets/financial resources;

f) product/services diversification (e.g. bundled products or services);

g) economies of scale;

h) economies of scope;

i) vertical integration;

j) highly developed distribution and sales network;

k) absence of potential competition; and

l) barriers to expansion.

A6.22 A dominant position can derive from a combination of these criteria, which taken separately may not necessarily be determinative.

Sufficiency of competition law

A6.23 As part of our overall forward-looking analysis, we also assess whether competition law by itself (without ex-ante regulation) is sufficient to address the competition problems identified. Aside from the need to address this issue as part of the three-criteria test, we also consider this matter in our assessment of the appropriate remedies which, as explained below, are based on the nature of the specific competition problems we identify within the relevant markets as defined. We note that the SMP Guidelines clarify that, if the NRAs designate undertakings as having SMP, they must impose on them one or more regulatory obligations.

A6.24 In considering this matter, we bear in mind the specific characteristics of the relevant markets we have defined, Generally, the case for ex ante regulation is based on the existence of market failures which, by themselves or in combination, mean that the establishment of competition might not be possible if the regulator relied solely on ex post competition law powers that have been established for dealing with more conventional sectors within the economy. Therefore, it is appropriate for ex ante regulation to be used to address these market failures along with any entry barriers that might otherwise prevent effective competition from becoming established within the relevant markets we have defined. By imposing ex ante regulation that promotes competition, it may be possible to reduce such regulation over time as markets become more competitive, allowing greater reliance on ex post competition law.

A6.25 Ex post competition law is also unlikely in itself to bring about (or promote) effective competition, as it prohibits the abuse of dominance rather than the holding of a dominant position itself. In contrast, ex ante regulation is normally aimed at actively promoting the development of competition through attempting to reduce the level of market power (or dominance) in the identified relevant markets, thereby encouraging the establishment of effective competition.

A6.26 We generally take the view that ex ante regulation provides additional legal certainty for the market under review and may also better enable us to us intervene in a timely manner.

We may also consider that certain obligations are needed as competition law would not remedy the particular market failure(s), or that the specific clarity and detail of regulations is required to achieve a particular result.

Remedies procedure

Powers and legal tests

A6.27 The Framework Directive prescribes what regulatory action NRAs must take depending upon whether or not the market in question has been found effectively competitive. Where a market has been found to be effectively competitive, NRAs are not allowed to impose SMP obligations and must withdraw such obligations where they already exist. On the other hand, where the market is found not to be effectively competitive, the NRAs must identify the undertakings with SMP on that market and then impose appropriate obligations on them.[115]

A6.28 NRAs have a suite of regulatory tools at their disposal, as reflected in sections 87-91 of the Act. Specifically, the Access Directive specifies a number of SMP obligations, including transparency, non-discrimination, accounting separation, access to and use of specific network elements and facilities, price control and cost accounting. When imposing a specific obligation, the NRA will need to demonstrate that the obligation in question is based on the nature of the problem identified, proportionate and justified in the light of the policy objectives as set out in Article 8 of the Framework Directive.[116]

A6.29 Specifically, for each and every proposed SMP obligation we explain why it satisfies the test that the obligation is:

a) objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;

b) not such as to discriminate unduly against particular persons or against a particular description of persons;

c) proportionate to what the condition or modification is intended to achieve; and

d) in relation to what it is intended to achieve, transparent.[117]

A6.30 Additional legal requirements may also need to be satisfied depending on the SMP obligation in question. For example, in the case of price controls, the NRA's market analysis must indicate that the lack of effective competition means that the CP concerned might sustain prices at an excessively high level, or apply a price squeeze, to the detriment of end-users and that the setting of the obligation is appropriate for the purposes of promoting efficiency, promoting sustainable competition and conferring the greatest possible benefits on the end-users of public electronic communications services. In that instance, NRAs must take into account the investment made by the CP and allow it a

[115] See Article 16(3) and (4) of the Framework Directive; sections 84 and 87(1) of the Act.
[116] See Article 8(4) of the Access Directive.
[117] Section 47 of the Act; Article 8(5) of the Framework Directive and Article 5(2) of the Access Directive.

reasonable rate of return on adequate capital employed, taking into account the risks specific to a particular new investment, as well as ensure that any cost recovery mechanism or pricing methodology that is mandated serves to promote efficiency and sustainable competition and maximise consumer benefits.[118]

A6.31 Where an obligation to provide third parties with network access is considered appropriate, NRAs must take into account factors including the feasibility of the proposed network access, the technical and economic viability of creating networks[119] that would make the network access unnecessary, the investment of the network CP which is required to provide access[120] and the need to secure effective competition[121] in the long term.[122]

A6.32 To the extent relevant to this review, we demonstrate the application of these requirements to the SMP obligations in question in the relevant parts of this document. In doing so, we also set out our assessment of how, in our opinion, the performance of our general duties under section 3 of the Act is secured or furthered by our regulatory intervention, and that it is in accordance with the six Community requirements in section 4 of the Act. This is also relevant to our assessment of the likely impact of implementing our conclusions.

Ofcom's general duties - section 3 of the Act

A6.33 Under the Act, our principal duty in carrying out functions is to further the interests of citizens in relation to communications matters and to further the interests of consumers in relevant markets, where appropriate by promoting competition (section 3(1)).

A6.34 In so doing, we are required to secure a number of specific objectives, including securing the availability of a wide range of electronic communications services throughout the UK (section 3(2)(b)).

A6.35 In performing our duties, we are also required to have regard to a range of other considerations, as appear to us to be relevant in the circumstances. In this context, we consider that a number of such considerations are relevant, namely:

- the desirability of promoting competition in relevant markets (section 3(4)(b)); and
- the desirability of encouraging investment and innovation in relevant markets (section 3(4)(d)).

A6.36 We must also have regard to the principles under which regulatory activities should be transparent, accountable, proportionate, consistent, and targeted only at cases in which action is needed (section 3(3)), as well as the interest of consumers in respect of choice, price, quality of service and value for money (section 3(5)).

[118] Section 88 of the Act, which implements Article 13 of the Access Directive.
[119] Including the viability of other network access products, whether provided by the dominant provider or another person.
[120] Taking account of any public investment made.
[121] Including, where it appears to us to be appropriate, economically efficient infrastructure-based competition.
[122] Section 87 of the Act.

A6.37 Ofcom has, however, a wide measure of discretion in balancing its statutory duties and objectives. In so doing, we take account of all relevant considerations, including responses received during our consultation process, in reaching our conclusions.

European Community requirements for regulation - sections 4 and 4A of the Act and Article 3 of the "BEREC Regulation[123]"

A6.38 Our functions exercised in this review fall under the CRF. As such, section 4 of the Act requires us to act in accordance with the six European Community requirements for regulation. Where it appears to Ofcom that any of their general duties conflict with one or more of their duties under section 4, priority must be given to those latter duties (section 3(6)).

A6.39 In summary, these six requirements are:

- to promote competition in the provision of electronic communications networks and services, associated facilities and the supply of directories;
- to contribute to the development of the European internal market;
- to promote the interests of all persons who are citizens of the European Union;
- to take account of the desirability of Ofcom carrying out its functions in a manner which, so far as practicable, does not favour one form of or means of providing electronic communications networks, services or associated facilities over another - i.e. to be technologically neutral;
- to encourage the provision of network access and service interoperability, to such extent as Ofcom considers appropriate for the purpose of securing efficient and sustainable competition, efficient investment and innovation, and the maximum benefit for customers of CPs; and
- to encourage compliance with certain standards in order to facilitate service interoperability and secure freedom of choice for the customers of CPs.

A6.40 We consider that the first, second, third, fourth and fifth of those requirements are of particular relevance to the matters under review and that no conflict arises in this regard with those specific objectives in section 3 of the Act that we consider are particularly relevant in this context.

A6.41 Section 4A of the Act requires Ofcom, in carrying out certain of its functions (including, among others, Ofcom's functions in relation to market reviews under the CRF) to take due account of applicable recommendations issued by the EC under Article 19(1) of the Framework Directive, which aim to achieve the harmonised application of provisions of the CRF and the achievement of the objectives set out in Article 8 of the Framework Directive. Where we decide not to follow such a recommendation, we must notify the EC of that decision and the reasons for it.

[123] Regulation (EC) No 1211/2009 of the European Parliament and of the Council of 25 November 2009 establishing the Body of European Regulators of Electronic Communications (BEREC) and the Office ('the BEREC Regulation') http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009R1211&from=EN.

A6.42 Similarly, Article 3(3) of the BEREC Regulation requires NRAs to take utmost account of any opinion, recommendation, guidelines, advice or regulatory best practice adopted by BEREC.

A6.43 Accordingly, we have taken due account of the applicable EC recommendations and utmost account of the applicable opinions, recommendations, guidelines, advice and regulatory best practices adopted by BEREC relevant to the matters under consideration in this review.

Impact assessment - section 7 of the Act

A6.44 The analysis presented in the whole of this document represents an impact assessment, as defined in section 7 of the Act.

A6.45 Impact assessments provide a valuable way of assessing different options for regulation and showing why the preferred option was chosen. They form part of the best practice of policy-making. This is reflected in section 7 of the Act, which means that generally Ofcom has to carry out impact assessments where this is likely to be a significant effect on business or the general public, or when there is a major change in Ofcom's activities. However, as a matter of policy Ofcom is committed to carrying out and publishing impact assessments in relation to the great majority of its policy decisions. For further information about Ofcom's approach to impact assessments, see the guidelines, Better policy-making: Ofcom's approach to impact assessment, which are on the Ofcom website: http://www.ofcom.org.uk/consult/policy making/guidelines.pdf .

A6.46 Specifically, pursuant to section 7, an impact assessment must set out how, in our opinion, the performance of our general duties (within the meaning of section 3 of the Act) is secured or furthered by or in relation to the regulation we impose.

A6.47 Ofcom is separately required by statute to assess the potential impact of all our functions, policies, projects, and practices on the following equality groups: age, disability, gender, gender reassignment, pregnancy and maternity, race, religion or belief and sexual orientation. EIAs also assist us in making sure that we are meeting our principle duty of furthering the interests of citizens and consumers regardless of their background or identity.

Regulated entity

A6.48 The power in the Act to impose an SMP obligation by means of an SMP services condition provides that it is to be applied only to a 'person' whom we have determined to be a 'person' having SMP in a specific market for electronic communications networks, electronic communications services or associated facilities (i.e. the 'services market').

A6.49 The Framework Directive requires that, where an NRA determines that a relevant market is not effectively competitive, it shall identify 'undertakings' with SMP on that market and impose appropriate specific regulatory obligations. For the purposes of EC competition law, 'undertaking' includes companies within the same corporate group (Viho v

Commission Case C-73/95 P [1996] ECR I-5447[124]), for example, where a company within that group is not independent in its decision making.

A6.50 We consider it appropriate to prevent a dominant provider to whom a SMP service condition is applied, which is part of a group of companies, from exploiting the principle of corporate separation. The dominant provider should not use another member of its group to carry out activities or to fail to comply with a condition, which would otherwise render the dominant provider in breach of its obligations.

[124] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:61995CJ0073:EN:PDF

A7. Sources of evidence

A7.1 We have noted throughout this document the evidence we have relied upon for our analysis and how we have relied upon that evidence. This annex provides a list of the main sources of evidence used and, where possible, the web links where the evidence used is published online. We also list all respondents to our formal information requests.

A7.2 While this annex lists the main evidence we have relied upon, the list is for convenience only and is not intended to be exhaustive.

Information gathering using statutory powers under Section 135 of the Communications Act 2003

A7.3 During this market review, we have issued a series of notices under Section 135 of the Communications Act 2003 ("the Act") requiring various telecoms providers to provide specified information as specified.

A7.4 Notices were addressed to and, except where otherwise indicated, responses were received from:

- 24Seven Communications Ltd
- Affiniti Integrated Solutions Ltd
- British Telecommunications plc (BT)
- Business Broadcast Communications Ltd
- Cheers International Sales Ltd
- Citrus Telecommunications Ltd
- Digital Select Ltd
- Dynamic Mobile Billing Ltd
- Flextel Ltd
- GCI Network Solutions Ltd
- I-Net Communications Group plc
- J-TEC UK Ltd
- Magrathea Telecommunications Ltd
- Swiftnet Ltd
- Telecom2 Ltd
- Vodafone Ltd (UK)

Ofcom documents

A7.5 Oftel, The National Numbering Scheme: Statement, January 1997: http://www.ofcom.org.uk/static/archive/oftel/publications/1995_98/numbering/nnsjan97/numsch97.htm

A7.6 Oftel, Consultation on Personal Numbering Services, March 1998: http://www.ofcom.org.uk/static/archive/oftel/publications/1995_98/fair_trading/pnum398.htm

A7.7 Oftel, Restoring trust in Personal Numbering: A statement issued by the Director General of Telecommunications on proposals to stop abuse of the 070 range, 31 October 2001: http://www.ofcom.org.uk/static/archive/oftel/publications/numbering/pers1001.htm

A7.8 Ofcom, Telephone Numbering: Safeguarding the future of numbers, 27 July 2006: http://stakeholders.ofcom.org.uk/binaries/consultations/numberingreview/statement/statement.pdf

A7.9 Ofcom, Statement on raising confidence in telephone numbers: Amending General Condition 17, 31 May 2007: http://stakeholders.ofcom.org.uk/binaries/consultations/numbering03/statement/gc17statement.pdf

A7.10 Ofcom, Removal of the requirement for pre-call announcements on 070 numbers, 17 December 2007: http://stakeholders.ofcom.org.uk/consultations/numbering03/070precall/

A7.11 Ofcom, Personal Numbering - Guidance on the acceptable use of 070 numbers, 27 February 2009: http://stakeholders.ofcom.org.uk/telecoms/numbering/guidance-tele-no/070-guidance

A7.12 Ofcom, Statement on the review of the 070 personal numbering range, 27 February 2009: http://stakeholders.ofcom.org.uk/binaries/consultations/070options/statement/statement.pdf

A7.13 Ofcom, Determination to resolve 0870 call termination rate disputes between BT and various operators, 17 June 2009: http://stakeholders.ofcom.org.uk/consultations/resolve0870calls/statement/

A7.14 Ofcom, Simplifying non-geographic numbers – improving consumer confidence in 03, 08, 09, 118 and other non-geographic numbers: https://www.ofcom.org.uk/__data/assets/pdf_file/0020/63380/non-geo.pdf

A7.15 Ofcom, Simplifying Non-geographic Numbers - Detailed proposals on the unbundled tariff and Freephone, April 2012: https://www.ofcom.org.uk/__data/assets/pdf_file/0017/63440/parta.pdf

A7.16 Ofcom, Simplifying Non-geographic Numbers - Detailed proposals on the unbundled tariff and Freephone, Part B, 4 April 2012: http://stakeholders.ofcom.org.uk/binaries/consultations/simplifying-non-geographic-no/summary/Partb.pdf

A7.17 Ofcom, Simplifying non-geographic numbers: Final statement on the unbundled tariff and making the 080 and 116 ranges free-to-caller, 12 December 2013. http://stakeholders.ofcom.org.uk/binaries/consultations/simplifying-non-geo-no/statement/final-statement.pdf

A7.18 Ofcom, the 03 Number Range – Decision to clarify the revenue-sharing with callers is prohibited on the 03 number range, December 2014. https://www.ofcom.org.uk/__data/assets/pdf_file/0023/51944/statement.pdf

A7.19 Ofcom, Mobile call termination market review 2015-18 consultation, 4 June 2014: https://www.ofcom.org.uk/__data/assets/pdf_file/0016/74221/mct_consultation.pdf

A7.20 Ofcom, Mobile call termination market review 2015-18, Statement, 17 March 2015: https://www.ofcom.org.uk/__data/assets/pdf_file/0029/76385/mct_final_statement.pdf

A7.21 Ofcom, The National Telephone Numbering Plan, 5 June 2017 https://www.ofcom.org.uk/__data/assets/pdf_file/0013/102613/national-numbering-plan-june-2017.pdf

A7.22 Ofcom, Mobile call termination market review 2018-21, Consultation, 27 June 2017: https://www.ofcom.org.uk/__data/assets/pdf_file/0011/103340/mobile-call-termination-consultation.pdf

Ofcom research

A7.23 Ofcom, Non Geographic Telephone Numbers: Omnibus Survey, November 2011. http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/omnibus-survey.pdf

A7.24 Ofcom, Non Geographic Telephone Numbers: Omnibus Survey, October 2012. https://www.ofcom.org.uk/__data/assets/pdf_file/0026/44891/omnibus-survey2012.pdf

A7.25 Kantar Media (on behalf of Ofcom), 'Mobile Call Termination Omnibus', Annex 18 of Mobile call termination market review 2015-18, February 2014. http://stakeholders.ofcom.org.uk/binaries/consultations/mobile-call-termination-14/annexes/Annex_18_Consumer_survey.pdf

Other sources

BEREC

A7.26 ERG, Revised working paper on the SMP concept for the new regulatory framework, September 2005, ('the ERG SMP Position'). http://berec.europa.eu/doc/publications/public_hearing_concept_smp/erg_03_09rev3_smp_common_concept.pdf

National Fraud Intelligence Bureau

A7.27 [✂].

The Serious Organised Crime Authority

A7.28 The Serious Organised Crime Authority, e-mail sent in response to the Ofcom consultation on Simplifying Non-Geographic numbers, December 2010.

Phone-paid Service Authority

A7.29 Phone-paid services authority, information provided to Ofcom in relation to the complaints it received and investigations it conducts about 070 numbers.

Other Websites (retail prices)

A7.30 Evidence gathered by Ofcom from the following websites in relation the maximum retail prices charged by telecoms providers for calls to 070, mobile, local and national numbers:

- O2: 070 'service numbers and access charges' https://www.o2.co.uk/help/account-and-billing/other-numbers-and-charges,
- O2: voice call (monthly) http://www.o2.co.uk/assets2/Tariffs/pm/pm_charges_terms.html,
- Vodafone: (pay as you go) http://www.vodafone.co.uk/cs/groups/public/documents/contentdocuments/pay-as-you-go-terms-and-charge.pdf, (monthly) https://www.vodafone.co.uk/explore/costs/call-charges/index.htm
- Vodafone: (monthly) https://www.vodafone.co.uk/explore/costs/call-charges/index.htm
- Three: http://www.three.co.uk/Three_price_guide
- EE: 070 (monthly) http://ee.co.uk/content/dam/ee-help/Help-PDFs/pay-monthly-what-it-costs-07-march-2017.pdf
- EE: voice call (pay as you go) https://ee.co.uk/content/dam/ee-help/help-pdfs/ouk-payg-price-guide-post-30032017-v2.pdf
- Virgin Media: (monthly) http://store.virginmedia.com/virgin-media-mobile/pay-monthly/pay-monthly-call-charges.html
- Virgin Media: (pay as you go) http://store.virginmedia.com/virgin-media-mobile/pay-as-you-go/call-charges.html
- TalkTalk: https://m0.ttxm.co.uk/gfx/help/mobile/priceguide/mktg-1551-220001295_mobile_price_guide_update_v2.compressed.pdf
- PlusNet: https://www.plus.net/help/legal/mobile-price-guide/
- BT: 070 https://www.productsandservices.bt.com/assets/pdf/BT_PhoneTariff_SpecialNos.pdf
- BT: Local, National, Mobile:https://www.productsandservices.bt.com/assets/pdf/BT_PhoneTariff_Residential.pdf
- Sky: http://www.sky.com/shop/__PDF/SkyTalkTariffGuide.pdf

- TalkTalk: 070: https://help2.talktalk.co.uk/guided-assist/pricing/yes-27/call-rates/other-call-types-0/other-call-charges-0/ .
- TalkTalk: Local, National, Mobile: https://help2.talktalk.co.uk/how-much-do-uk-calls-cost
- EE: http://ee.co.uk/content/dam/ee-help/Help-PDFs/home-broadband/EE-Home-Price-Guide.pdf
- Virgin Media: Local, National: http://www.virginmedia.com/content/dam/virginmedia/dotcom/images/shop/downloads/011117_Everyday_Call_Charges_V2.pdf
- Virgin Media: Mobile, 070: http://www.virginmedia.com/content/dam/virginmedia/dotcom/images/shop/downloads/011117_Call_Charges_By_%20Dial_Code_V2.pdf
- Vonage Search Tool: https://www.vonage.co.uk/home/call-plans/rates/
- Post Office: https://www.postoffice.co.uk/dam/pdf/homephone-calling-plans-and-pricing-tables-version-V9.pdf

A8. Evidence of concerns

A8.1 We have noted throughout this document our concerns relating to the 070 number range. The evidence giving rise to those concerns is set out in this Annex.

Our key concerns

A8.2 As explained throughout this document, in the case of 070 markets, our key concerns relate to the wholesale level. We consider that market power in the termination of calls to 070 numbers leads to high 070 WCT rates which, in turn, lead to:

a) distortion to consumer choice arising from high retail prices: Originating call providers (retail telecoms providers) set high charges for calls to 070 numbers. Prices which are high in relation to cost distort consumers' choices, even where consumers are fully aware of the price they are being charged.[125] The distortion arises as consumers are deterred from calling 070 numbers even though they value them more than the (marginal or incremental) cost. This suggests that absent other factors, there are likely to be less calls to 070 numbers than is socially efficient (given the end-user's decision to take a 070 number);

b) **distortion to consumer choice arising from consumer confusion between 070 and 07x mobile numbers:** Consumers are generally unable to distinguish 070 from '07x' mobile numbers, and tend to be unaware of 070 calls attracting much higher charges than calls to 07x mobile numbers. This likely leads to consumers making more and longer calls to such numbers than they would do had they been aware of the charges they incur when calling 070 numbers;

c) **bill shock:** Consumers are susceptible to "bill shock" (higher than expected charges) when they call 070 numbers because they believe retail 070 call charges to be similar to those of calling 07x mobile numbers (which are often included as part of bundle) when in fact they are much higher;

d) **vulnerability to fraud and scams:** Evidence (discussed at paragraphs 4.14-4.17 of Section 3 and in this annex) confirms that there is substantial improper use of 070 numbers, with consumers misled into making 070 calls which incur high retail charges (their retail telecoms providers then have to pay high 070 WCT rates). Fraudsters (often operating abroad) can also use 070 numbers to make it more difficult to be traced; and

e) **poor reputation:** Evidence (discussed at paragraphs 4.20-4.22 and A8.76-A8.79) suggests that misuse of the 070 range has in the past undermined the use of these numbers for innovative delivery of electronic communications services.

[125] Evidence, as presented in this annex, shows that both fixed and mobile OCPs set 070 call charges that are significantly greater than the rates they pay to TCPs for terminating these 070 calls.

A8.3 The evidence and analysis relating to our finding that there are high 070 termination rates can be found in Annex 9. We set out in this annex the evidence that gives rise to our key concerns set out above.

High retail prices

A8.4 As noted above, we consider that market power in the termination of 070 numbers leads to in high 070 WCT rates which, in turn, leads to high retail prices.

A8.5 The evidence that we have relied on giving rise to this concern is based on the published retail prices for calls to a 070 number as opposed to the retail price for a call to a mobile or fixed line phone number.

A8.6 Table A8.1 provides a snapshot of the range of maximum prices (in ppm) charged by a selection of mobile providers for calls to 070 numbers as well as the charges for a standard voice call.[126]

A8.7 It should be noted that calls to 070 numbers are not included in customer's monthly allowance in any of the tariffs we have considered and therefore will always be charged at the rate indicated, irrespective of whether the customer has available minutes in their allowance on their chosen tariff.

[126] The information contained in Table A8.1 has been sourced from operator's websites and are subject to change. Some of the charges vary depending on the tariff, hence the range of charges indicated for some providers. Owing to the variance depending on tariff, whilst every care has been taken to gain an accurate snapshot, the ranges indicated may vary.

Table A8.1: Maximum retail mobile call prices (ppm) out of inclusive call bundles

Telecoms Provider (mobile)	070 (pay monthly)	070 (pay as you go)	Voice call (pay monthly)	Voice call (pay as you go)
O2[127]	55.00	66.00	35.00	30.00
Vodafone[128]	55.00	45.00	55.00	35.00[129]
Three[130]	104.00[131]	104.00	35.00	3.00
EE	75.00[132]	75.00	50.00[133]	40.00[134]
Virgin Media	250.00[135]	250.00[136]	50.00	35.00
TalkTalk Mobile[137]	75.00	75.00	40.00	40.00
Plusnet Mobile[138]	76.60	76.60	40.00	40.00

Source: Operator websites

[127] **O2** 070 'service numbers and access charges' https://www.o2.co.uk/help/account-and-billing/other-numbers-and-charges,
O2 voice call (monthly) http://www.o2.co.uk/assets2/Tariffs/pm/pm_charges_terms.html,
O2 voice call (pay as you go) http://www.o2.co.uk/assets2/Tariffs/paygo_charges_terms_intsim.html
[128] **Vodafone** (pay as you go) http://www.vodafone.co.uk/cs/groups/public/documents/contentdocuments/pay-as-you-go-terms-and-charge.pdf, (monthly) https://www.vodafone.co.uk/explore/costs/call-charges/index.htm
[129] Most calls are 30ppm, only Vodafone Big Value Bundle out-of-bundle calls (including voicemail) is 35ppm.
[130] http://www.three.co.uk/Three_price_guide
[131] **Three** (070) Depending on the band, calls range from 30.6-104. However, band 3 calls cost 85.8 plus a 122 call charge. Total charge for the first minute would be 207.8p.
[132] **EE** 070 (monthly) http://ee.co.uk/content/dam/ee-help/Help-PDFs/pay-monthly-what-it-costs-07-march-2017.pdf EE charges either 35 or 75 depending on the 070 number being called, however the majority are 75ppm. Same applies for 070 (pay as you go): http://ee.co.uk/content/dam/ee-help/Help-PDFs/EE-PAYM-07-Calling-010715.pdf
[133] **EE** voice call (monthly) http://ee.co.uk/content/dam/ee-help/Help-PDFs/ee-pay-monthly-shared-from170816-march-2017.pdf
[134] **EE** voice call (pay as you go) https://ee.co.uk/content/dam/ee-help/help-pdfs/ouk-payg-price-guide-post-30032017-v2.pdf
[135] **VM** (monthly) http://store.virginmedia.com/virgin-media-mobile/pay-monthly/pay-monthly-call-charges.html range from 50-250ppm.
[136] **VM** (pay as you go) http://store.virginmedia.com/virgin-media-mobile/pay-as-you-go/call-charges.html range from 35-250ppm.
[137] https://m0.ttxm.co.uk/gfx/help/mobile/priceguide/mktg-1551-220001295_mobile_price_guide_update_v2.compressed.pdf
[138] https://www.plus.net/help/legal/mobile-price-guide/ voice calls can range from 33-40ppm.

A8.8 Table A8.2 provides a snapshot of the range of maximum prices (in ppm) that fixed line providers charge customers for calls to local numbers, national numbers, mobile numbers and to 070 numbers.[139]

Table A8.2: Maximum retail fixed call prices (in ppm)

Telecoms Provider	Calls to 070 numbers	Calls to local/national numbers	Calls to mobile numbers
BT	51.06[140]	8.07	19.20
Sky[141]	50.88	9.50	12.70
TalkTalk	50.88[142]	13.50[143]	20.00
EE[144]	65.00	12.50	15.00
Virgin Media	51.07	12.00[145]	19.35[146]
Vonage[147]	83.00	0.00	10.00
Post Office[148]	51.60	9.50	19.20

Source: Operator websites

A8.9 As can be seen from the evidence in the tables above, calls to 070 numbers are generally charged at a higher rate, and in some case at a considerably higher rate, than calls to mobiles or fixed line numbers.

A8.10 Similarly, in respect of fixed line providers, the connection charges for calls to 070 numbers are generally higher than the charges for calls to mobiles or local/national numbers.

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[139] The information contained in Table A8.2 has been sourced from operator's websites and are subject to change. Some of the charges vary depending on the tariff, hence the range of charges indicated for some providers. Owing to the variance depending on tariff, whilst every care has been taken to gain an accurate snapshot, the ranges indicated may vary.
[140] **BT:** 070, Local/National and Mobile: http://www.bt.com/pricing/current/Call_Charges_boo/0016_d0e5.htm#0016-d0e5
[141] http://www.sky.com/shop/__PDF/SkyTalkTariffGuide.pdf
[142] **TT:** 070: https://help2.talktalk.co.uk/guided-assist/pricing/yes-27/call-rates/other-call-types-0/other-call-charges-0/ . It is our understanding that the Services Pn2 rate is a 070 rate.
[143] **TT**: Local, National, Mobile: https://help2.talktalk.co.uk/how-much-do-uk-calls-cost Mobile charges range from 6.25-20ppm.
[144] http://ee.co.uk/content/dam/ee-help/Help-PDFs/home-broadband/EE-Home-Price-Guide.pdf
[145] **VM:** Local, National: http://www.virginmedia.com/content/dam/virginmedia/dotcom/images/shop/downloads/011117_Everyday_Call_Charges_V2.pdf
[146] **VM:** Mobile, 070: http://www.virginmedia.com/content/dam/virginmedia/dotcom/images/shop/downloads/011117_Call_Charges_By_%20Dial_Code_V2.pdf
[147] **Vonage** Search Tool: https://www.vonage.co.uk/home/call-plans/rates/
[148] **Post Office**: https://www.postoffice.co.uk/dam/pdf/homephone-calling-plans-and-pricing-tables-version-V9.pdf

A8.11 Table A8.3 below provides the maximum call connection charges that the above fixed line providers require (in pence per call) to set up or connect the calls to local/national numbers, mobile numbers and to 070 numbers.[149]

Table A8.3: Maximum Call Connection Charges[150] for retail fixed call prices (in pence per call)

Telecoms Provider	Calls to local/national numbers	Calls to mobile numbers	Calls to 070 numbers
BT	21[151]	21	n/a[152]
Sky	15.9	15.9	51.17
TalkTalk	20	20	51.12
EE	20	20	65
Virgin Media	0	21	51.07
Vonage	0	19	19
Post Office	15	15	51.60[153]

Source: Operator websites

Distortion to consumer choice and bill shock arising from consumer confusion between 070 and 07x mobile numbers

A8.12 As noted throughout this document, we are concerned that consumers are generally unable to distinguish between 070 and 07x mobile numbers, and tend to be unaware of 070 calls attracting much higher charges than calls to 07x mobile numbers.

A8.13 We consider this likely leads to consumers making longer calls to such numbers than they would do had they been aware of the charges they incur when calling 070 numbers. We

[149] The information contained in Table A8.3 has been sourced from operator's websites and are subject to change. Some of the charges vary depending on the tariff, hence the range of charges indicated for some providers. Owing to the variance depending on tariff, whilst every care has been taken to gain an accurate snapshot, the ranges indicated may vary. All the information contained in the table can be found at the same locations as the data in Table A8.2.

[150] Call connection charges are sometimes also referred to by providers as 'Call set-up fee' or 'Call charge'.

[151] BT's price lists links to the BT Consumer Price Guide for call set-up fees: https://www.productsandservices.bt.com/assets/pdf/BT_PhoneTariff_Residential.pdf. Current set-up fees are listed as 21 pence.

[152] BT's Consumer Price Guide states that set up fees of 21ppm are applied to all chargeable calls except personal numbering for which a minimum call charge of 5.5 pence applies.

[153] Post Office charges ranged from 15 – 51.60 pence per call.

also consider that this leads to "bill shock" when they make a call to a 070 number because they believe they are calling an 07x mobile number.

A8.14 The evidence we have relied on giving rise to these key concerns has been collected from a range of sources which are detailed below.

Ofcom complaints data

A8.15 Ofcom has received 173 complaints relating to 070 numbers between January 2013 and September 2017. The complaints relating to 070 numbers indicated can be broadly placed into two categories:

i) Complaints relating to the price of calls to 070 numbers (79); and

ii) Complaints relating to 'range misuse' (94).

A8.16 Of the 79 complaints received categorised as relating to the price of calls to 070 numbers, most of these relate to consumers' shock at receiving a higher than normal bill following a call being made to a 070 number. We note that for some of these complaints, consumers specifically said that they thought that they were calling a mobile number. In some cases, consumers also noted that they did not know that calls to these numbers would not be included in their monthly plan.

A8.17 Of the 94 complaints categorised as 'range misuse', most of these relate to consumers feeling they have been tricked into calling a 070 number, and when they realise the amount they have been charged they consider it to have been fraudulent or excessive. We note that:

i) a large majority of the complaints relate to consumers applying for a job online and receiving a response asking them to call a 070 number to discuss the job or set up an interview and then being kept on hold for a prolonged period of time;

ii) some complaints relate to consumers being provided with a 070 number to call on a dating website, or receiving a missed call from a 070 number asking for an urgent call back; and

iii) many of these complaints also include consumers specifically stating that they thought they were calling a mobile number and therefore being shocked at receiving a higher than normal bill.

A8.18 Whilst we acknowledge that the number of complaints in relation to 070 numbers over the last few years has not been huge, we consider that they evidence the type of consumer harm that can arise from the use (and misuse) of the 070-number range. Looking at the substance of the complaints, they also provide evidence of consumers confusing 070 numbers with mobile numbers, as well as evidence of bill shock.

Evidence from Ofcom publications

A8.19 Ofcom has completed several reviews of the regulation relating to non-geographic calls since 2010. Some of the evidence gathered in these reviews is relevant to our

consideration of consumer harm relating to the 070 range and we set out the evidence relied on below.

A8.20 We note that, although some of the data is a few years old, we still consider that it is relevant evidence of consumer behaviour towards 070 numbers today, particularly when coupled with:

i) the complaints relating to this number range as noted above;

ii) the evidence of continued fraudulent activity on this number range set out below; and

iii) the consistency between the surveys noted below which themselves were undertaken several years apart.

Simplifying non-geographic numbers

A8.21 Ofcom completed a review on Simplifying Non-Geographic numbers from 2010–12. Ofcom completed two consultations in this time, one in December 2010[154] and one in April 2012.[155]

The 2010 Consultation

A8.22 In the 2010 Consultation, we highlighted the concerns we had over the continuing abuses on the 070 range. We highlighted evidence from our consumer research which showed that a large proportion of consumers confused 070 numbers with mobile numbers.[156] We noted that much of the consumer detriment on these ranges arose from this confusion.

A8.23 In addition, we noted that the combination of uncertainty, confusion and high non-geographic number prices led to higher consumer vulnerability to fraud. Evidence cited included two complaints received by the OAT in relation to 070 numbers.[157]

A8.24 The vast majority of respondents to the 2010 Consultation agreed that there was a real case for intervention in the 070 (and 076[158]) range because of the tangible consumer harm from fraud. For example:

[154] Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0020/63380/non-geo.pdf
[155] Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0017/63440/parta.pdf
[156] This consumer research was from a 2009 Consumer Survey which shows that 34% of consumers claimed to recognise 070 numbers but 48% of these respondents thought they were mobile numbers. Only 8% recognised them as personal numbers. See the 2010 consultation, Paragraph 6.151.
[157] 2010 Consultation, paragraph 4.63.
[158] We have excluded 076 range from this review as the competition position is very different. 076 is used for pager services in the UK or mobile in the Isle of Man or Channel Islands. Pager number termination rates are determined in discussion with the pager customers and hence subject to competition on both sides of the market. Crown Dependency 076 numbers are regulated by those administrations. The 076 range is far smaller, in terms of the number of sub-ranges allocated, than 070 and we are addressing fraud and misuse in 076 through tightening of number allocation and focussed enforcement.

i) EE noted that: "the proximity of the 070 …. number range to the other 07x mobile ranges creates significant scope for customer confusion and deception. Ofcom's evidence shows not only that consumers are confused – but more worryingly, they do not know that they are confused (as illustrated by the fact 34% of consumers claim to understand 070 numbers, but 48% of these people thought they were mobile numbers)."[159]

ii) Telefonica referred to consumers mistaking 070 …. numbers for mobile numbers. It stated that "we consider that customer exposure to fraud is greater where…a number range can be confused with other number ranges that are commonly found in a bundle (070)."[160]

iii) Three reported that "070 numbers are often confused with mobile numbers" as an example that "the complex structure of non-geographic number ranges likely contributes to consumer confusion."[161]

The 2012 Consultation

A8.25 Ofcom published a further consultation on simplifying non-geographic numbers in April 2012.[162] In that Consultation, we set out that there were specific issues with the 070 number range which needed to be addressed, in particular around consumer detriment arising from an inability for consumers to distinguish 070 (and 076[163]) numbers from UK mobile numbers.[164]

A8.26 We noted that the considerations for the 070 (and 076) number range were somewhat different to the other non-geographic ranges that were being considered in the review because of the greater risk of fraud on these ranges and the potential confusion with UK mobile numbers and we therefore decided to consult separately on this.[165]

Non-geographic telephone numbers Omnibus survey

A8.27 Following the 2012 Consultation, Ofcom commissioned research in relation to its strategic review of non-geographic numbers. This included the non-geographic telephone numbers Omnibus survey which provided evidence to assist Ofcom in evaluating the potential options for intervention in relation to non-geographic numbers (the Omnibus survey).[166]

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[159] EE, December 2010 consultation response, page 75, paragraph 6. Available at: http://stakeholders.ofcom.org.uk/binaries/consultations/simplifying-non-geo-numbers/responses/Everything_Everywhere.pdf

[160] O2, December 2010 consultation response, paragraphs 96 to 98; available at: http://stakeholders.ofcom.org.uk/binaries/consultations/simplifying-non-geo-numbers/responses/O2.pdf

[161] Three, December 2010 consultation response, paragraph 27, page 9, available at: http://stakeholders.ofcom.org.uk/binaries/consultations/simplifying-non-geo-numbers/responses/Three.pdf

[162] See: https://www.ofcom.org.uk/consultations-and-statements/category-1/simplifying-non-geographic-no

[163] 076 numbers are not being considered as part of this review. See footnote 34.

[164] The 2012 Consultation, paragraph 6.33.

[165] The 2012 Consultation, paragraph 6.37.

[166] A copy of the Omnibus survey is available here: https://www.ofcom.org.uk/__data/assets/pdf_file/0026/44891/omnibus-survey2012.pdf

A8.28 In relation to 070 (and 076[167]) number range the findings from the Omnibus survey showed that:

a) **Awareness and understanding:** 21% of respondents with telephones claimed to be aware of 070 numbers. However, there was confusion with mobile numbers among those who said they were aware of 070 numbers; 59% of those claiming to be aware of 070 numbers thought they were within the mobile telephone range. Overall, less than 1% of people with telephones were aware of and correctly understood what type of number range 070 were.[168]

b) **Price perception:** When asked to estimate the price of calls to 070 or 076 numbers, most said they did not know the price (around six in ten of all people with a telephone and just under four in ten of those who said they were aware of 070/07 numbers). Among those who gave estimates of the price, the average price given for calling 070 numbers on mobile telephones was 42p and on landline telephones was 37p.[169]

c) **Claimed calling behaviour:** 7% of those with telephones said they had ever called a 070 number (however, the high level of consumer confusion with mobile telephone numbers should be remembered). Around 1 in 5 people said they were likely (either fairly or very) to call back if they missed a call from either a 070 or 076 number. Around one in ten people said they were likely to call back if they got a text or email message from an unknown business asking them to call back on either a 070 or 076 number. It should be noted that the most common answer from telephone users was that they were unlikely to call back after receiving a missed call on any of the number ranges.[170]

Mobile Call Termination (MCT) Review

A8.29 The consultation for the 2015-18 MCT market review was published on 4 June 2014.[171] As part of this consultation Ofcom commissioned research from Kantar Media relating to consumers' awareness of the charges that calls to 070 numbers attract.

A8.30 Kantar Media surveyed consumers' awareness of call charge differentials across the 07x number range.[172] The responses showed that:

i) 42% of respondents thought that not all 07x calls cost the same; 37% that all 07x calls cost the same; and 22% did not know;[173] and

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[167] 076 numbers are not being considered as part of this review. See footnote 34.
[168] See paragraph 4.1 of the Omnibus survey.
[169] See paragraph 4.3 of the Omnibus survey.
[170] See paragraph 4.2 of the Omnibus survey.
[171] Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0016/74221/mct_consultation.pdf
[172] Commissioned as part of Ofcom's work on the 2015 Mobile Call Termination Market Review. Kantar Media carried out the research in February 2014 using telephone interviews for a total base of 2069 respondents. See Ofcom, Mobile call termination market review 2015-18, Annex 18. Available at: http://stakeholders.ofcom.org.uk/binaries/consultations/mobile-call-termination-14/annexes/Annex_18_Consumer_survey.pdf-
[173] Q15A (When making calls to numbers starting with 07 and followed by other digits, do you think that all calls will cost the same?) and Q15B (Which of the following types of calls do you think have different rates?).

ii) of the 42% of respondents that thought that not all 07x calls cost the same, 30% thought that 070 call charges differ from charges of calls to other 07x services. This means that just 13% of respondents understood that 070 call charges differ from charges to other 07x services.

Vulnerability to fraud and scams

A8.31 As noted throughout this document, we are also concerned that there is substantial improper use of 070 numbers, with consumers misled into making 070 calls which incur high retail charges (their retail telecoms providers then have to pay high 070 WCT rates). In addition, fraudsters (often operating abroad) can also use 070 numbers to make it more difficult to be traced.

A8.32 The evidence we have set out above is also relevant to this, particularly the complaints data which provides examples of where consumers have been the victims of such scams. In addition to the above, we have also relied on the following sources of information to assess the extent to which scams are present on the 070 number range:

a) Artificially inflated traffic;

b) Data from the National Fraud Intelligence Bureau;

c) Information from the Serious Organised Crime Agency; and

d) Information from the Phone-paid Services Authority.

Artificially Inflated Traffic (AIT)

A8.33 AIT relates to where the flow of calls to a number is, as a result of any activity on or on behalf of the party operating that number, disproportionate to the flow of calls which would be expected from good faith commercial practice and usage of the network.

A8.34 In the case of 070 we consider that it is worth distinguishing between UK and international AIT.

a) National fraud arising generally from encouraging individuals to call though a variety of methods such as:

i) Including the 070 in an advertisement for a (non-existent) job opportunity;

ii) Arranging for mobiles to see a missed call;

iii) Promotion of 070 as a contact number for a fake contest.

b) International AIT takes advantage of the fact that many overseas communications companies have not developed a separate tariff for 070 from the UK mobile 07 ranges and the fraudsters arranges for calls to be generated where such confusion exists and where the retail cost of the call is below the international 070 termination rate.

A8.35 Given the above, patterns of unusual call behaviour, for example, an elevated level of concurrent calls may be indicative of potential fraud, as there is no obvious reason that a single number should be the target of so many individual calls at one time.

A8.36 Similarly, a high level of internationally originated calls can be indicative of AIT as if the range was being used legitimately in the UK you would not expect to see a high volume of overseas-originated calls as they are generally being advertised in the UK and directed at a UK customer base; and

A8.37 In order to understand the level of potential AIT on the 070 range we sent BT a formal information request under Section 135 of the Act on 07 September 2017. This requested data (covering the period from 01 January to 31 August 2017) on:

- the volume of calls to 070 numbers which used BT's network which had international origination;
- the frequency of concurrent calls to 070 numbers;[174]
- the percentage of calls estimated to contravene the Ofcom Numbering Plan; and
- the number of cases raised that relate to AIT.

Internationally originated calls

A8.38 Table A8.4 below sets out the number of calls to 070 numbers and the number of call minutes to 070 numbers which used BT's transit network from August 2016 to August 2017.

Table A8.4: Number of calls and call minutes to 070 numbers using the BT transit network

Month/Year	Number of calls to 070 numbers	Number of call minutes to 070 numbers
Aug 2016	[✂]	[✂]
Sep 2016	[✂]	[✂]
Oct 2016	[✂]	[✂]
Nov 2016	[✂]	[✂]
Dec 2016	[✂]	[✂]
Jan 2017	[✂]	[✂]
Feb 2017[175]	[✂]	[✂]
Mar 2017	[✂]	[✂]
Apr 2017	[✂]	[✂]

[174] Concurrent calls occur where more than one call is being routed to the same 070 number simultaneously.
[175] We asked BT why the volume of minutes might be reducing and they could not provide an explanation but did not that the traffic might have be routed via another international carrier and not traverse BT's network.

Month/Year	Number of calls to 070 numbers	Number of call minutes to 070 numbers
May 2017	[✂]	[✂]
Jun 2017	[✂]	[✂]
Jul 2017	[✂]	[✂]
Aug 2017	[✂]	[✂]

Source: BT's response to 070 market review s.135 request

A8.39 Table A8.5 below shows the percentage of those 070 calls indicated in the table above that originated internationally and the percentage of call minutes to 070 Numbers originated internationally.

Table A8.5: Percentage of calls and call minutes to 070 numbers originated internationally

Month/Year	Percentage of calls to 070 originated internationally	Percentage of call minutes to 070 originated internationally
Aug 2016	[✂]	[✂]
Sep 2016	[✂]	[✂]
Oct 2016	[✂]	[✂]
Nov 2016	[✂]	[✂]
Dec 2016	[✂]	[✂]
Jan 2017	[✂]	[✂]
Feb 2017	[✂]	[✂]
Mar 2017	[✂]	[✂]
Apr 2017	[✂]	[✂]
May 2017	[✂]	[✂]
Jun 2017	[✂]	[✂]
Jul 2017	[✂]	[✂]
Aug 2017	[✂]	[✂]

Source: BT's response to 070 market review s.135 request

A8.40 As can be seen from the tables above, in five of the thirteen months covered by this sample, over [✂] of call minutes transiting through BT to 070 numbers originated internationally. [✂].

Concurrent calls

A8.41 Table A8.6 below shows the frequency of instances of concurrent calls to 070 numbers on the BT transit network from August 2016 to August 2017.

Table A8.6: Total call volumes and number of concurrent calls on the BT transit network

Month/Year	Total volume of calls	Number of concurrent calls
Aug 2016	[✂]	[✂]
Sep 2016	[✂]	[✂]
Oct 2016	[✂]	[✂]
Nov 2016	[✂]	[✂]
Dec 2016	[✂]	[✂]
Jan 2017	[✂]	[✂]
Feb 2017	[✂]	[✂]
Mar 2017	[✂]	[✂]
Apr 2017	[✂]	[✂]
May 2017	[✂]	[✂]
Jun 2017	[✂]	[✂]
Jul 2017	[✂	[✂]
Aug 2017	[✂]	[✂]

Source: BT's response to 070 market review s.135 request

A8.42 As can be seen from the table above, there is a large fluctuation in the number of concurrent calls transiting the BT network each month, however this works out to an average of 79,641. Again, we consider that this is indicative that AIT is a concern on the 070 number range.

BT comments on use of the 070 range

A8.43 We asked BT to provide an estimate of the percentage of calls which involve the use of the 070 number range which it considers contravene the Ofcom Numbering Plan (and/or any

other regulatory rules in relation to the use of telephone numbers), and the basis for these views. BT explained that:

> "BT estimates that in some months 40%-60% of PNS[176] traffic have characteristics which would indicate either unusual call behaviour, AIT or could contravene the Ofcom Numbering Plan for some operators. It should be noted that this can change significantly from month to month, and that not all operators have this proportion of traffic which may contravene the Ofcom Number Plan…"

A8.44 As further evidence of this, BT explained that as 070 numbers are used in place of Geographic or Mobile numbers, it could be assumed that the origination points would be similar. BT provided the data set out in the table below which shows the percentage of calls which BT sends to terminating operators from three types of originating line: Geographic, Mobile and "Other". "Other" includes International calls, as well as where partial or non-geographic CLIs are presented.

Table A8.7: Percentage of calls BT sent to terminating operators from three types of operating line: Geographic, Mobile and "Other" between January 2016 to August 2017

CLI Type	Destination					
	Geo		Mobile		PNS (070)	
	Total calls	Total Duration (mins)	Total Calls	Total Duration (mins)	Total Calls	Total Duration (mins)
Geographic	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Mobile	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
International/Other	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Total	100%	100%	100%	100%	100%	100%

Source: BT's response to 070 market review s.135 request

A8.45 BT explained that "over the period analysed (Jan 16 to Aug 17), there are approximately 30% more calls generated to PNS destination numbers from abroad when compared to the relative distribution for both Geographic and Mobile destination numbers." It went on to

[176] BT has referred to "PNS" in answering this question which is an abbreviation of Personal Numbering Service. 070 is the number range that has been designated as Personal Numbering Services and therefore we assume that BT is referring solely to the 070 range in its response. Personal Numbering Services are defined in the National Telephone Numbering Plan as services based on number translation that enables End-Users to be called or otherwise contacted, using a single Personal Telephone Number, and to receive those calls or other communications at almost any Telephone Number, including Mobile Numbers. A Personal Number is also defined in the Plan as a Telephone Number "assigned by a Personal Numbering Service Provider, which allows a Subscriber to receive calls or other communications at almost any Telephone Number, including a Mobile Number".

set out that "there are several months where the percentage of origination minutes is in excess of 50%."

A8.46 BT set out that 'AIT cases' have been raised to challenge the validity of this traffic against various operators.[177] BT also noted that the use of PNS has included call recording services[178] which BT understands should not be hosted on these number ranges as since they offer a value in kind to the user of the 070 service is not consistent with the restriction on 070 not to be a revenue sharing range[179]. For the periods in question, the traffic to these services made up more than 50% of billed traffic.

A8.47 [✂].

National Fraud Intelligence Bureau

A8.48 [✂].

A8.49 [✂].

A8.50 We have sought more up to date information which should be available in the new year.

The Serious Organised Crime Agency

A8.51 A representative from the Serious Organised Crime Agency (SOCA) working in a team that tackles international mass marketing fraud wrote to us in response to the 2010 Consultation.

A8.52 Mass marketing fraud is when you receive an uninvited contact by email, letter, phone or adverts, making false promises to con you out of money. Mass marketing fraudsters try to lure victims with false promises of large cash prizes, goods or services in exchange for upfront fees, or what they call taxes or donations.

A8.53 This representative noted that the 070 number range [✂].[180]

Phone-paid Services Authority (PSA) data

A8.54 The PSA is the UK regulator for content, goods and services charged to a phone bill. In this capacity the PSA can investigate services on 070 numbers if they are found to offer phone-

[177] [✂]

[178] Call recording services are services which offer the customer the ability to record and store the calls that they make to organisations and access these recording in the event of, for example, a dispute.

[179] See discussion on the meaning of revenue sharing in our statement on the 03 Number Range – Decision to clarify the revenue-sharing with callers if prohibited in the 03 number range - https://www.ofcom.org.uk/__data/assets/pdf_file/0023/51944/statement.pdf.

[180] Email from [✂], officer with the Serious Organised Crime Agency, to the Ofcom NGCS Review e-mail address, dated 5 November 2010.

paid services[181] and/or the number is being misused and if the cost of the call exceeds 10p per minute.[182]

A8.55 The PSA explained that overall it sees a limited number of complaints about 070 numbers (currently one or two per week on average). However, it highlighted that it faces difficulties with investigation and enforcement when it does receive these complaints. It noted the following difficulties in particular:

a) **Identifying the user of the 070 number** – The PSA noted that *"070 numbers are not supposed to have a revenue sharing element or to be a route to consumption of a traditional premium rate service. Consequently where the numbers are being used correctly PSA does not enforce its Code and users of 070 numbers do not register with PSA."*[183] It went on to say that they *"therefore have no means in the first instance of identifying who is operating a 070 number when an issue arises.";*

b) **Evidence gathering** – The PSA noted that even where they are able to identify the user of a 070 number, since 070 numbers are not supposed to be used to provide PRS, *"companies doing so have little incentive to co-operate with PSA investigations."* It went on to say that it is *"difficult to establish where the money is going and demonstrate the relationships between parties in the value chain. The complexity and effort required to gather the evidence is significant."*;

c) **Impact, including deterrence** – The PSA noted that *"Identification of those parties and individuals responsible for abuse of these numbers is difficult and it is possible for substantial sums of money to have been made prior to detection or investigation. In the past, enforcement has had limited effect on reducing abuse of such numbers by those who have obtained or used them..."*.[184]; and

d) **Resource management** – The PSA noted that *"aside from cases where a consumer is merely seeking to check a number, we have a limited ability to help individual consumers and there is a resource cost to us in looking into complaints…"*.

A8.56 Alongside this information, the PSA also provided some comments on the preliminary assessments it had completed in the form of 'initial assessments' and 'informal enquiries'. It said that these have highlighted the following trends:

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[181] Phone paid services is a generic name for goods and services that can be purchased over the phone and are charged to your telephone bill or pay-as-you-go credit.

[182] It should be noted that the PRS has explained that *"the 070 number range is not intended to be used to deliver premium rate services (PRS) and revenue sharing between the user and the network provider is not permitted by Ofcom for this number range. As such, where the number range is used as intended by Ofcom (e.g. as 'follow me' numbers) the Phone-paid Services Authority (PSA) does not currently enforce its Code of Practice notwithstanding that under the current PRS Condition, 070 numbers that are charged at over 10ppm fall within sub-paragraph (e)(ii) of the PRS Condition and are therefore technically regulated by PSA."*

[183] Our understanding is that the registration requirement is intended to provide information that helps the value chain perform due diligence on third parties and therefore is directed at services which have a revenue sharing element.

[184] The PSA noted that they have sanctions available of imposing a bar on participation in the PRS industry on either the company in question or where appropriate, named individuals.

a) While the ultimate use of numbers is described in accordance with Ofcom's designated purpose, we are seeing longer value chains where revenue is shared across a group of companies, all claiming to be resellers;

b) Some individuals appear to be turning to 070 numbers for business use, where 08 or 03 numbers would be more suitable. The challenge is proving revenue share, which may suggest misuse of the numbers for financial gain;

c) [✂]; and

d) [✂].

Poor reputation

A8.57 Finally, we consider there is evidence that the high cost and examples of misuse of the 070 range presented above have in the past undermined the use of these numbers for innovative delivery of electronic communications services.

A8.58 For example, we were approached [✂] by [✂] and [✂] to discuss a potential joint venture for the development of a [✂] application using mobile numbers. The parties' intention was that the parties would use a mobile network and numbers to provide a personal numbering service. [✂].

A8.59 In fact, the parties considered alternative numbering options, including using the 070 range; however, 070 numbers were rejected as an option due to a) their negative reputation and b) as calls to 070 numbers were being charged by mobile operators in excess of 50ppm and were not included in bundled minutes.

A8.60 In addition, we note that Autotrader, who used to be a legitimate user of 070 for personal numbering services, no longer uses the 070-number range and instead now uses 'Protect Your Number' based on 03 which is free for both the caller and receiver.[185]

[185] See: https://www.autotrader.co.uk/safety_and_security_centre/protect_your_number

A9. Estimating the costs of providing 070 calls

A9.1 This annex sets out the analysis we have undertaken to estimate the cost of providing 070 calls, and presents our overall estimates of this cost.

A9.2 Wholesale termination rates that are significantly greater than the costs of providing 070 calls are consistent with our proposed SMP findings.

A9.3 This cost analysis also informs our impact assessment. As discussed in Section 4, we propose to adopt a price control remedy which benchmarks the 070 termination rate against the mobile termination rate (MTR). In particular, this annex provides an overview of the scale of costs that terminating call providers (TCPs) would need to recover from end-users if we set 070 WCT rates below costs.

A9.4 This analysis reflects our understanding of the network and functions involved in providing 070 calls. Our estimates are based on information we have received from providers in response to requests for information under our formal powers.

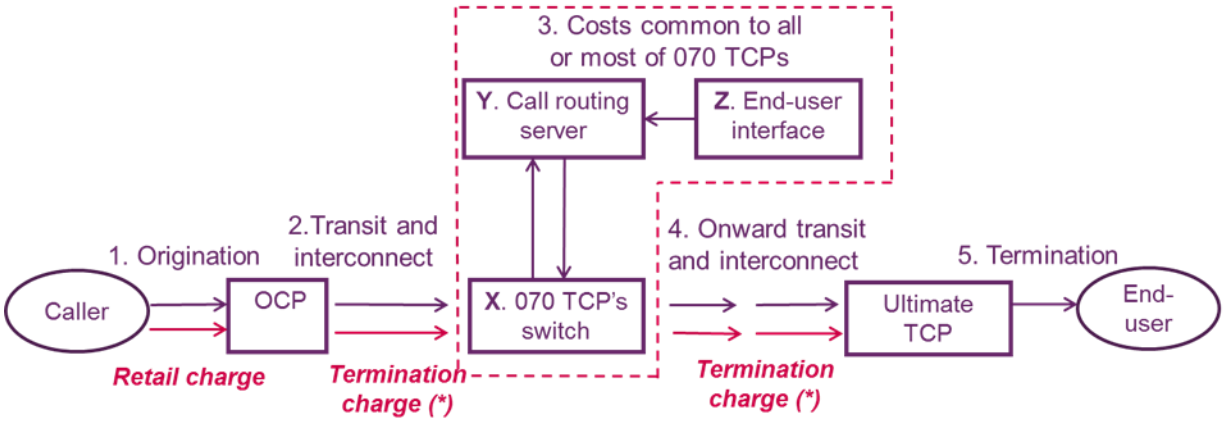
A9.5 In this annex we:

- discuss the network and functions involved in providing 070 services;
- present (average) wholesale 070 termination rates (as a benchmark against which cost estimates are compared); and
- estimate the cost of providing 070 costs (using the cost standard Long-Run Incremental Cost (LRIC)).

Network and functions involved in providing 070 calls

A9.6 Figure A9.1 illustrates the functions involved in the provision of a 070 call, from the point of origination (1) until the point of termination to the end-user (5).

Figure A9.1: Network and functions involved in providing 070 calls



(*) the OCP may route traffic to the 070 TCP via a transit network but the charges for this are out of scope of this request

A9.7 Stage 1 involves the origination of 070 calls, with retail customers (callers) paying retail charges to their originating communications providers (retail telecoms providers) for making such calls.

A9.8 Stage 2 involves the conveyance and (if needed) transit of 070 calls to the point of handover to TCPs. In practice, retail telecoms providers (as they are not interconnected with 070 TCPs) often hand calls over to a transit provider to route to TCPs. At the end of stage 2, retail telecoms providers (or the transit provider on their behalf) pay the wholesale termination rates applicable to the 070 calls originating from their network to TCPs. retail telecoms providers also bear the costs of transit, while the CP handing over calls bears the costs of interconnection. After stage 2, TCPs manage, and thus bear the costs of, the handling and routing of calls to the number selected by the end-user (the call recipient).

A9.9 As depicted in Figure A9.1 above, Stage 3 includes three main functions:

a) The switch ("Function X"):

i) receives the incoming call request, identifies the call as a 070 call, and initiates a query to the call routing server; and

ii) receives the destination number from the call routing server and sets up the call to that number.

b) The call-routing server ("Function Y"):

i) receives a query from the switch, determines the routing number to which the call should be routed; and

ii) returns the routing number to the switch in order to establish the connection.

c) **Interface services ("Function Z"):** This function provides an end-user interface (typically involving a website), whereby 070 customers can manage and update the number they would like their 070 number to be routed to.

Wholesale termination rates

A9.10 BT sets termination rates for calls to 070 numbers by charge band, with rates potentially varying by time of day (Day, Evening, Weekend). TCPs decide which band, and thus which rate, applies to calls to the 070 numbers within their range, and communicate their decision to BT.[186] When retail customers originate calls to a 070 number, retail telecoms providers have to pay the rate associated with the relevant charge band.

A9.11 The termination rates for these numbers were established in discussion between BT and 070 operating companies when this range first came into service in the 1990s. The rates, therefore, may reflect the prevailing costs (and profit margins) of rerouting calls to mobiles and international locations at that time. However, as domestic and international

[186] A TCP can set differing charge bands for differing numbers within its range.

termination rates have decreased over time 070 termination rates have remained fairly static.

A9.12 The combination of the number of charge bands (28 in total) and rate variation by time of day means that there is a large number of termination rates. In order to identify the bands that are more material to the provision of 070 calls, we determined the 070 payments that BT[187] as transit provider made to TCPs (covering termination rates, and made on behalf of retail telecoms providers) by charge band.[188]

A9.13 Table A9.1 below presents the (weighted average)[189] rates for the five bands that generated the highest 070 payments in 2016, for calls to 070 numbers originating in the UK. Among these five bands, rates vary from 14.44 pence per minute (ppm) to 39.27ppm for an evening rate.

Table A9.1: Termination rates of calls originating in the UK (ppm)

Charge band	Day	Evening	Weekend	% of 070 payments
pn2 Rate	38.37	39.27	39.43	95%
k Rate	23.28	15.45	7.12	3%
pn10 Rate	25.78	27.23	27.61	0.33%
pn8 Rate	13.19	14.44	13.46	0.27%
pn3 Rate	37.18	30.44	30.80	0.24%
Total				99% (100%)

Source: Ofcom analysis of data provided in response to 070 market review s.135 requests.

A9.14 These five bands account for 99% of 070 payments from calls originating in the UK, with the remaining 23 bands accounting for only 1%. The pn2 Rate band alone generates 95% of 070 payments originating in the UK. Rates in these five bands vary from 7.12ppm for the k Rate (Weekend) to 39.43ppm for pn2 Rate (Weekend). In order to understand average rates, we established a weighted average rate for each time of day, using the proportions of total 070 payments generated at that time of day as weights. This yields a weighted average rate of 37.61ppm for Day, 38.23ppm for Evening, and 38.13ppm for Weekend. These high average rates are largely driven by the pn2 Rate, which has the highest rates and accounts for the highest share (95%) of 070 payments.

A9.15 Table A9.2 below presents the (weighted average) rates for the five bands that generated the highest 070 payments in 2016, for calls to 070 numbers originating outside the UK. For these five bands, the rates range from 13.60 to 13.92ppm for a day rate and from 0.06ppm to 4.22ppm for a weekend rate. The rates are 9.71ppm for an evening rate.

[187] We also collected data regarding the payments made by Vodafone as a transit provider. However, as BT accounts for over [✂] of termination payments, we have not included Vodafone's data in our analysis.
[188] There is a long tail of bands that are not widely used, and generate only limited 070 payments.
[189] Rates are weighed according to the volume of minutes using that rate.

Table A9.2: Termination rates of calls originating outside the UK (ppm)

Charge band	Day	Evening	Weekend	% of 070 payments
pn2 Rate	13.92	9.71	4.22	44%
k Rate	13.92	9.71	1.63	18%
pn10 Rate	13.92	9.71	0.86	8%
pn8 Rate	13.60	9.71	0.39	6%
j Rate	13.92	9.71	0.06	4%
Total				79%(100%)

Source: Ofcom analysis of data provided in response to 070 market review s.135 requests.

A9.16 These five bands account for 79% of 070 payments originating outside the UK, with the remaining 22 bands accounting for 21%. The pn2 Rate band alone generates 44% of 070 payments. Rates in these five bands vary from 13.60ppm for the pn8 rate (Day) to 13.92ppm, 0.06ppm for the j Rate (Weekend) to 4.22ppm, and are static at 9.71ppm (Evening) across all bands. In order to understand average rates, we established a weighted average rate for each time of day, using the proportions of total 070 payments generated at that time of day as weights. This yields an average rate of 13.85ppm for Day, 9.68ppm for Evening, and 4.21ppm for Weekend.[190] These rates are largely driven by the pn2 Rate, which has the highest rates and accounts for the highest share (44%) of 070 payments.

A9.17 We note that these rates are lower overall than the rates applied to calls originating in the UK. As calls originating outside the UK are a greater proportion (59%) of total calls, the overall (i.e. including UK and international originated calls) rates are closer to the rates discussed in paragraph A9.16.

A9.18 Our analysis of weighted average rates indicates that the rates for terminating calls to 070 numbers are high, both in ppm and in comparison to the current MTR (currently 0.495ppm).[191] As discussed in Section 4 (paragraphs 4.72-4.82), we are proposing that the cost of these calls should be benchmarked to the MTR.

[190] This weighted average rate is lower than the 9.71ppm figure in Table A9.2 as the charge bands accounting for the other 21% of payments have a lower average termination rate.
[191] Ofcom, 2017. Mobile call termination market review Consultation 2018-2021, page 2. Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0011/103340/mobile-call-termination-consultation.pdf

Estimating the cost of providing 070 services

Choice of cost standard

A9.19 Our analysis seeks to estimate the incremental cost (ppm) of providing 070 calls, incurred by an efficient TCP.

A9.20 LRIC is often used as a measure of the additional costs incurred in the long-run in telecoms markets, as a result of the provision of a particular service. We do not use average total costs because of the prevalence of common costs in the supply of telecoms services. This rationale also applies to our use of LRIC in estimating the incremental cost of the provision of 070 services.[192] Service providers may use the same network and functions to provide calls to both 070 and other non-geographic numbers, so that the costs of such elements are not unique to the provision of 070 calls. Assigning common costs to one call type is therefore difficult. We are therefore focusing on the LRIC of the provision of 070 calls, which includes those fixed costs which are specific to the provision of a 070 service.

A9.21 We consider that only the costs of an efficient TCP are relevant to the measure of cost. Taking account of inefficiencies in providing 070 calls would risk distorting the use of our cost analysis to inform our proposed remedies.

A9.22 Estimating costs on a ppm basis is consistent with the basis on which MTRs and FTRs are set. It also makes it easier to calculate the impact of our proposals on CPs, as the MTRs we benchmark against are also set on a ppm basis.

Data collected from providers

A9.23 In this section we describe the information collected from TCPs, and the main transit provider, BT, that is most important to our cost analysis.

070 Terminating Call Providers

A9.24 We requested information from fourteen 070 TCPs in total. This was made up of the six TCPs that received the highest 070 payments, and an additional eight TCPs that received smaller 070 payments of varying size. We requested information on:

- volumes of 070 and other non-geographic calls;
- destinations of the 070 calls they handle;
- whether they provide calls to other non-geographic number ranges; and
- costs of providing 070 and other non-geographic calls (see Table A9.3 below).

A9.25 We have excluded 11 TCPs from our detailed cost analysis. Of these:

[192] The incremental costs of a service are the difference between the total costs in a situation where the service is provided and the costs in another situation where the service is not provided. Common costs are costs that are shared across multiple services supplied by a firm but are not incremental to the provision of any one service.

a) 4 TCPs ([✂]) were excluded as they were unable to provide appropriate data (in terms of the cost category breakdown, or data specifically incremental to 070).

b) 6 TCPS ([✂]) were excluded as they only provide a 070 service via a reseller and were therefore unable to provide data on the total cost of providing a 070 service. At least some of the costs of the provision of 070 calls in this case appear to be incurred by the reseller such that using the TCPs' cost data would be likely to result in an underestimate of the cost.

c) 1 TCP ([✂]) was excluded as it had very low volumes of 070 calls. The provision of low volumes is likely to be inefficient as the fixed costs of installing and maintaining systems need to be borne across a much smaller base. It might be possible for this TCP to reduce its average costs by expanding its volumes.

A9.26 We consider the remaining three respondents (included in our detailed analysis) to be representative as they have large volumes of 070 calls and provide calls to other non-geographic number ranges. They should also face most of the cost of provision as they are a mixture of TCPs:

f) 1 TCP ([✂]) which only sells directly to the end-customer; and

g) 2 TCPs ([✂]) which sell both to the end-customer directly and via a reseller.

A9.27 Table A9.3 presents our summary analysis of the data provided by TCPs. In response to our information request, TCPs provided data on the annual cost incurred in various cost categories relevant to 070, for example 'end-user interface', as well as overall volumes of 070 calls (minutes). Using this data, we have estimated a conservative ppm figure for 070 calls, shown in Table A9.3 below. This is likely to be an overestimate of the true ppm cost of providing a 070 service, as a proportion of the annual costs may be either common to other services, or incremental to the provision of other services.

A9.28 TCPs also provided data on the proportion of each cost category which was incremental to the provision of 070 services. Using this data, we have estimated the amount of cost in each category which is incremental to the provision of 070 services. As outlined in Table A9.3 below, our analysis of responses from the three TCPs suggests that the majority of the costs involved in providing a 070 service are common to the provision of other services (92%). This is consistent with the responses of a number of other TCPs not included in our detailed estimates. For example, ([✂]) stated that switch/call routing functionality tends to be used by other non-geographic number ranges, or services other tha 070.[193] This suggests that our estimates of ppm costs in Table A9.3 may overestimate the true costs.

[193] Based on responses to the 070 market review s.135 request.

Table A9.3: Summary of cost information

	ppm (based on total annual cost) (2016)	Incremental % of cost of providing 070	Incremental cost of providing 070 (2016)
Switch and call routing functionality	0.04	2%	£3,723
End-user interface	0.02	60%	£18,005
Marketing and billing	0.02	12%	£12,027
Onward routing: transit/termination/ interconnection	0.08	2%	£6,277
Other costs[194]	0.01	5%	£586

Source: Ofcom analysis of data provided in response to 070 market review s.135 requests.

Note: These estimates are weighted averages (using minutes) based on the responses of three TCPs ([✂]).

Transit providers

A9.29 We requested information from the transit providers BT and Vodafone regarding the volumes of 070 calls they handled in 2015 and 2016, by TCP and charge band. BT was also asked to provide information regarding the traffic profile (between origination and handover to 070 TCPs) of these 070 calls.

Estimating the incremental cost (ppm) of providing 070 services

A9.30 For the purposes of our analysis we are only interested in the costs incurred by TCPs as our market is the market for termination of calls on a 070 number. TCPs do not incur material costs in stages 1 and 2 as retail telecoms providers bear the initial costs of transit (at stage 2) and the CP handing over calls bears the costs of interconnection. Our analysis therefore focuses on stages 3 to 5, where TCPs incur the costs of providing 070 calls. We proceed by estimating the incremental cost (ppm) for each of the stages 3 to 5 separately; summing these to get to our overall estimates.

A9.31 In contrast to the costs in stages 4 and 5 (discussed below), we cannot estimate the costs that TCPs incur in relation to stage 3 functions based on the regulated charges of products that can be purchased in wholesale markets (such as transit, interconnection or

[194] As reported by providers this includes costs such as 'internal development costs' and the cost of handling end user support queries.

termination). Absent this option, our estimate of stage 3 costs relies largely on the costs that TCPs provided in response to our information requests.[195]

A9.32 Table A9.4 below first presents the total costs reported by TCPs for the cost categories relevant to stage 3. This includes costs which are common to the provision of other non-geographic services.[196] In addition, Table A9.4 presents 070 volumes (in call minutes) and two estimates of the incremental cost (ppm) of providing 070 services:

a) Variant 1 (our base case) relies on the proportion as reported by TCPs in their responses; and

b) Variant 2 proxies this proportion using the proportion of all non-geographic calls made up by 070.

Table A9.4: Estimates of the incremental "stage 3" cost

Total cost	[✂]	[✂]	[✂]
Switch and call-routing functionality	£[✂]	£[✂]	£[✂]
End-user interface	£[✂]	£[✂]	£[✂]
Marketing and billing	£[✂]	£[✂]	£[✂]
Other costs	£[✂]	£[✂]	£[✂]
Total costs	£[✂]	£[✂]	£[✂]
070 call minutes	[✂]	[✂]	[✂]
Variant 1: % incremental as reported by TCPs			
Incremental proportion reported by TCPs	[✂]	[✂]	[✂]
Estimate of "stage 3" incremental cost (ppm)	[✂]	[✂]	[✂]
Variant 2: incremental proportion based on 070's share in total non-geographic traffic			
070 as a proportion of total non-geographic calls	[✂]	[✂]	[✂]

[195] We understand from these responses that TCPs who sell directly to end-users undertake the functions in stage 3, wholly or largely, using systems they have developed and operated. This suggests that there is no developed market for the functions that TCPs undertake in stage 3. For TCPs who do not sell directly to end-users, the reseller tends to bear this cost although we do not have robust information on the level of this cost to resellers.

[196] We include "marketing and billing" and "other costs" in our stage 3 costs as these do not sit well within the functions that TCPs undertake in stages 4 and 5.

Estimate of "stage 3" incremental cost (ppm)	[✂]	[✂]	[✂]

Source: Ofcom analysis of data provided in response to 070 market review s.135 requests.

A9.33 We also note that many of the costs incurred in "Stage 3" above, are similar to those incurred during the onward routing of off-net calls to ported mobile numbers. We currently estimate the LRIC of donor conveyance to be approximately 0.032ppm.[197] However, we would not expect the LRIC estimate of donor conveyance to be the same as the LRIC of providing a 070 service as the LRIC of donor conveyance is relevant only to the switch and call routing functionality element of our stage 3 cost estimate. In addition, donor conveyance tends to be provided by larger providers than those providing 070 services, which suggests that the costs involved may be different.

Stage 3: Switch, call routing and marketing and billing costs

A9.34 Our estimates in both variants indicate that the "stage 3" incremental cost is well below 1ppm.

A9.35 We include the weighted average of our "variant 1" estimates, which is 0.596ppm.

Stage 4 costs: interconnection and onward transit

A9.36 Once the number to which 070 calls needs to be routed has been determined (for example, the end-user's fixed or mobile number), TCPs need to transit calls to the point of handover. This requires TCPs to interconnect with a transit provider, who will provide transit and hand over calls to the terminating CPs. At this stage the terminating CP picks up the calls for termination to the final number.

A9.37 We consider that TCPs incur two types of costs, interconnection and onward transit, in stage 4.[198]

Interconnection costs

A9.38 Interconnection costs are likely fixed (i.e. the costs of being interconnected with transit providers do not vary greatly by volumes of calls handled) and largely common where TCPs (as is the case) provide calls to numbers other than 070. This suggests that the incremental cost of interconnection is very low.

A9.39 Interconnection costs depend on a range of factors such as a provider's network deployment and the interconnection products that it purchases. Despite this complexity and our view that interconnection costs are likely largely fixed/common, we have estimated the cost (ppm).

[197] Ofcom, 2017. Review of mobile donor conveyance charges for the period 2018-2021, page 9. Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0024/104658/consultation-donor-conveyance-charges.pdf
[198] With costs depending on the distance and route travelled by calls on their way to terminating CPs.

A9.40 Using data from providers we have estimated the incremental interconnection cost of providing 070 services by dividing the annual cost of interconnection (including common costs) by the volume of 070 minutes for each provider. We have then multiplied by the proportion of those costs which are incremental to 070 to establish the incremental cost (ppm). This also gives an estimate close to 0ppm, which we use in our analysis below.[199]

Cost of onward transit

A9.41 Information collected from TCPs suggests that the incremental cost of onward transit (ppm) is very low (close to 0ppm).[200] We have also estimated this cost based on the charges of regulated transit products and associated traffic profiles. Using the same methodology as the 03 analysis but based on current charge of transit products,[201] we estimate the cost of onward transit at 0.464ppm. As a conservative assumption, we use the higher cost estimate of 0.464ppm in our overall estimate below.

Stage 5 costs – termination

A9.42 TCPs will bear the costs of termination rates for calls to 070 numbers which are routed to mobile/fixed numbers. These termination rates are passed on to callers through call charges.

A9.43 We asked TCPs to provide the distribution of the destinations of the 070 calls they handled, i.e. the numbers to which end-users asked calls to be routed. Table A9.5 has been populated with the weighted average distribution across the three TCPs included in our detailed analysis.[202]

Table A9.5: Destination of 070 calls (2016)

	Proportion
UK fixed	27%
UK mobile	6%
Overseas fixed	1%
Overseas mobile	8%
Other destination	58%
Total	100%

Source: Ofcom analysis of data provided in response to 070 market review s.135 requests.

[199] This is based on the responses of [✂] and [✂]. We note that [✂] interconnection costs are included in the cost of onward routing.
[200] Moreover, TCPs were commonly not able to report costs of onward transit separate from the costs of terminating 070 calls to the numbers to which end-users have asked for 070 calls to be routed.
[201] This estimate is based on the charges (2016 prices) of the following products: Call termination local exchange, local tandem conveyance and inter-tandem Conveyance (short, medium and long).
[202] We note that there are marked differences between TCPs in terms of the distribution of their 070 calls' destinations. These differences may reflect the fact that TCPs deploy different business models and attract differing customer types.

A9.44 Responses to our information request suggest that "other destination" includes routing to VoIP and SIP channels, which do not involve termination charges as the calls are routed through the internet. It is also likely, given our understanding of the level of fraud in this market, that many of the calls routed to "other destinations" represent the fact that the number is not onward routed at all. If the termination rate was set based only on legitimate use of the range, we would expect it to be set above zero. For this reason, we exclude routing to "other destination" from our estimates of the incremental cost of 070.

A9.45 Rates for termination to UK fixed and mobile numbers have decreased significantly over time, and are currently at less than 0.5ppm (and very significantly so for termination to UK fixed numbers).[203] These rates are a small fraction of the rates that termination to 070 calls currently attract. Termination to fixed or mobile numbers overseas tend to attract much greater rates, with the level of rates depending greatly on the country where calls are terminated. It appears reasonable to expect that, on average, the rates for termination overseas are significantly greater than those in the UK.

A9.46 We estimate the termination cost (ppm) in three scenarios:

a) all 070 calls are terminated to UK fixed numbers,

b) all 070 calls are terminated to UK mobile numbers, or

c) all 070 calls are terminated to international mobile numbers.[204]

A9.47 Scenario a) suggests a termination rate of 0.035ppm; scenario b) of 0.495ppm; and scenario c) of 4.950ppm.[205]

A9.48 We have also estimated the cost of terminating 070 calls based on data from providers. These estimates are consistent with the incremental cost of termination (ppm) being materially below 1ppm.

Overall estimates of incremental cost of providing 070 calls

A9.49 Having estimated the incremental cost (ppm) of providing 070 calls for each of the stages 3 to 5 separately, in Table A9.6 below we present our overall estimates of this cost. Our estimates are made up of:

a) the stage 3 cost, estimated based on the common/incremental split reported by TCPs (i.e. variant 1 from Table A9.4 above);

b) the cost of interconnection and onward transit (stage 4), discussed at paragraphs A9.36-A9.41 above, and;

[203] 0.49ppm for termination to UK mobile numbers, and 0.035ppm for termination to UK fixed numbers (Ofcom, 2017. Narrowband Market Review: Draft Statement, page 10. Available at: https://www.ofcom.org.uk/__data/assets/pdf_file/0013/107320/nmr-draft-statement.pdf)

[204] We note that calls may also be routed to international fixed numbers, but this appears to be a small proportion (1%) of total call routing and has a lower average termination rate (0.35ppm).

[205] Based on a multiplier of ten applied to the UK mobile termination rate.

c) the cost of termination (stage 5), which varies depending on the UK numbers to which we presume 070 calls are terminated (to UK fixed numbers only; to UK mobile numbers only; to international mobile numbers).

Table A9.6: Estimates of the incremental cost (ppm) of providing 070 calls

	Cost types	[✂]	[✂]	[✂]	Average[206]
Stage 3	Switch, call routing functionality, end-user interface and other	[✂]	[✂]	[✂]	0.596
Stage 4	Interconnection		0.000		
	Onward transit		0.464		
Stage 5	Termination (UK fixed)		0.035		
	Termination (UK mobile)		0.495		
	Termination (International mobile)		4.950		
Incremental cost (ppm)	Termination to UK fixed	[✂]	[✂]	[✂]	1.096
	Termination to UK mobile	[✂]	[✂]	[✂]	1.556
	Termination to International mobile	[✂]	[✂]	[✂]	6.011

Source: Ofcom analysis of data provided in response to 070 market review s.135 requests.

Notes: These estimates are weighted averages based on the responses of three TCPs ([✂]). The estimates have been weighted by volumes (minutes).

A9.50 Our overall estimates, averaged across TCPs, are 1.096ppm for termination to UK fixed numbers, 1.556ppm for termination to UK mobile numbers and 6.011 for termination to international mobile numbers. These estimates suggest that the incremental cost (ppm) while much smaller than 070 termination rates (approximately 38ppm for calls originating

[206] This average is based on the responses of three providers only: [✂], [✂] and [✂] for the reasons discussed previously.

in the UK, as discussed at paragraphs A9.14), materially exceeds the rates for termination to UK mobile numbers (0.495ppm).[207]

Question A9.1: Do you agree with our approach to estimating the cost of providing a 070 service? Please provide reasons and evidence in support of your views.

[207] In light of the information provided by TCPs indicating that the "stage 3" incremental cost (ppm) is low (approximately 0.5ppm), we would only estimate the overall incremental cost (ppm) to exceed 2ppm if the incremental cost of interconnection and transit combined is greater than 1ppm. We would not expect this to be the case given the data provided by TCPs on interconnection and onward transit costs.

A10. Glossary

2014 EC Recommendation: Commission Recommendation of 9 October 2014 on relevant product and service markets within the electronic communications sector susceptible to ex-ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communication networks and services (2014/710/EU), which replaces the corresponding Commission Recommendation of 17 December 2007 (2007/879/EC).

Allocatee: The Communications Provider who has been allocated the use of a range of 070 numbers by Ofcom for a personal numbering services. The Allocatee agrees with other communications provider (subject to any regulatory constraint) the termination rate for its range and arranges for them to be contactable through networks operated by other Communications Providers.

Auto-dialler: A function provided by TCPs, whereby a user configures a device (e.g. a burglar alarm) to use a 070 number to call a specified telephone number.

BEREC: Body of European Regulators for Electronic Communications.

BT: British Telecommunications plc.

Calling Party Pays (CPP): The billing principle where retail charges for telephone calls are set in such a way that only the calling party (and not the called party) pays a charge when a call is made.

Countervailing buyer power (CBP): The restraint that a buyer is able to place on any attempt by the seller to set its prices above the competitive level.

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 across multiple services supplied by a firm but are not incremental to the provision of any one service.

Communications Act or "the Act": The Communications Act 2003.

EC: The European Commission.

End-user: The final consumer of a product or service. In the case of 070 numbers, the end-user controls the destination number to which calls are terminated.

ERG: European Regulators Group; replaced by BEREC in 2005.

EU: The European Union.

Fixed call termination: The service provided by an FCP to allow an retail telecoms provider to connect a caller with the intended call recipient on that FCP's network.

Fixed termination rate (FTR): The wholesale charge levied by FCPs for Fixed Call Termination services provided by them.

Incremental costs: The incremental costs of a service are the difference between the total costs in a situation where the service is provided and the costs in another situation where the service is not provided.

Long Run Incremental Costs (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+.

Mobile call termination (MCT): The wholesale service provided by an MCP to allow an retail telecoms provider to connect a caller with the intended mobile call recipient on that MCP's network.

Mobile termination rate (MTR): The wholesale charge levied by MCPs for MCT.

Mobile Communications Provider (MCP): A provider of mobile communication services.

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

National Telephone Numbering Plan (NTNP): setting out the telephone numbers available for allocation and any restrictions on how they may be adopted or used.

NTS: Number Translation Services.

Originating communications provider (retail telecoms provider): The telecoms provider of the end-user making a call, i.e. the telecoms provider from which the call originates.

Over-the-top (OTT) service: A type of service provided "over the top" of an existing data network connection such as a fixed or wireless broadband connection.

Ppm: Pence per minute.

Safeguard cap: A charge control set to constrain a TCP's ability to exercise SMP by setting excessive rates, set at a level at which it is considered relevant costs can be recovered.

SIP: Session Initiation Protocol.

SMP: Significant market power.

SSNIP: Small but Significant Non-transitory Increase in Price. This is typically taken to be an increase in price of between 5-10% above the competitive level and is used when considering whether hypothetical monopolies in a market could sustain a profit at such a price.

Sub-allocatee: An organisation granted contractually by an allocate the management of a sub-set of the 070 range controlled by an allocatee

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

Termination rate: The rate charged by a TCP to an retail telecoms provider for terminating a call.

Voice over Internet Protocol (VoIP): A method of carrying voice calls on fixed and mobile networks by converting speech into data packets (and back) and carrying it using IP.

Wholesale Call Termination (WCT): Wholesale termination services.