Ofcom
making communications work
for everyone

Future of telephone numbers

First consultation

CONSULTATION:

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Annex

1. Overview

In February, we published our policy statement on the future of fixed telephony services.[1] This set out some of the potential benefits to consumers as phone companies move their landline services to newer 'internet protocol' ("**IP**") technology. We explained the substantial changes taking place in the UK's telecoms networks, the roles and responsibilities of different organisations, and our expectations of telecoms providers as they make these changes.

We also set out Ofcom's role, which includes looking at regulatory policy considerations relating to the future of fixed telephone services. One of those considerations is what the future of telephone numbers should look like. In this document, we look at how numbers might need to evolve so they continue to promote confidence in telephone services.

What we propose – in brief

What people and businesses want and need from landline phone numbers is changing. Despite the growth of identifiers like IP addresses, telephone numbers will remain a key means by which consumers identify who they are calling and who is calling them. The eventual move to all-IP networks will result in the removal of constraints imposed by legacy networks. This will provide an opportunity for more flexibility and could revolutionise how phone numbers are organised and used. In this document, we look at how this might impact the way landline numbers are dialled and whether area codes, and their associated location information, should be preserved.

The way calls are paid for has evolved, which can result in unexpected call costs for consumers. The costs of most calls are included in packages, and there are alternative ways of paying for services. We look at how paying for individual calls outside of packages, and differences in call pricing practices (such as anomalies in the cost of calling some 07 mobile and personal numbers), can result in unexpected charges for customers. This can lead to a general lack of trust in numbers and, ultimately, reduced confidence in telephone services. Within this context, we examine whether there remains a role for using 084 and 087 non-geographic numbers as a means for paying for services in the future.

Given these developments in telephone services, we propose to review our rulebook on phone numbers in the UK – called the National Telephone Numbering Plan.

This overview is a simplified high-level summary only. The proposals we are making and our reasoning are set out in the full document.

Context

1.1 Telephone calls are important to many people and businesses. Around eight in ten UK households (81%) have a home phone service and 94% of adults use a mobile phone.[2]

[1] *The future of fixed telephone services*, Ofcom statement, 2019. https://www.ofcom.org.uk/phones-telecoms-and-internet/information-for-industry/telecoms-competition-regulation/future-fixed-telephone-services.
[2] Ofcom Technology Tracker H1 2018. See Ofcom, 2018. *Communications Market Report*, p.11. https://www.ofcom.org.uk/__data/assets/pdf_file/0022/117256/CMR-2018-narrative-report.pdf.

Nearly all (96%) small and medium sized businesses use landlines and most (64%) use mobile phones.[3] More than 200 billion minutes of phone calls a year are made in the UK, which generates call revenues for industry of more than £3bn.[4]

1.2 Although different ways of making calls have emerged - such as 'Over The Top' ("**OTT**") voice and messaging applications - and usage of traditional telephone services is falling, phone calls are likely to remain important. As with other platforms, the more people that are connected to a telephone network, the more each user benefits from the option to contact others. What makes phone services stand out is that it is an open platform, where anyone using a phone service can call any other user, whatever network they are on.

1.3 UK telephone networks are undergoing substantial change, as telecoms providers gradually move their landline customers from the country's traditional telephone network – the 'public switched telephone network' ("**PSTN**") – to IP technology.

1.4 For most customers, switching to an IP-based service should be straightforward. They will continue to receive what they recognise as a traditional phone service and will keep their existing telephone number. For many, the only change will be that their telephone service will be delivered via a socket on their broadband router rather than a traditional telephone socket. For most mobile customers, the migration will be seamless as networks and mobile handsets move to 4G.

1.5 These changes create opportunities. For example, to help identify and prevent nuisance calls and to improve the quality of phone calls. Therefore, it is important that regulation is kept under review through these changes.

1.6 Today, we have published three consultations on the future use of phone numbers, and the arrangements between networks. Our aims are to:

- **Promote competition between providers** of phone services, recognising the changing market, where OTT, social media and messaging platforms offer alternatives to traditional phone calls.
- **Promote confidence in phone numbers and services** by tackling nuisance and scam calls and addressing pricing practices that lead to unexpected or unreasonable charges.
- **Protect consumers from harm** by making sure they continue to have access to important services.

This document

1.7 Ofcom is responsible for the administration of the UK's phone numbers. We have a general duty to ensure that the best use is made of numbers, and to encourage efficiency and innovation for that purpose. As part of carrying out our duty we publish a Numbering Plan,

[3] A proportion which may have increased since the latest survey we commissioned which was *the SME experience of communications services: research report*, by Jigsaw, 2016. https://www.ofcom.org.uk/__data/assets/pdf_file/0030/96348/Ofcom-SME-consumer-experience-research-2016-Report.pdf.

[4] Ofcom data tables in the annual minutes and voice revenues for fixed and mobile in *Telecommunications data revenues, volumes and market share update Q3 2018*. https://www.ofcom.org.uk/research-and-data/telecoms-research/data-updates/telecommunications-market-data-update-q3-2018.

setting out the telephone numbers available for allocation and any restrictions on how they may be adopted or used.

1.8 There have been several developments in telephone services that we consider may have an impact on the way numbers are managed and used in the future. We have initiated a review of numbering to ensure that the Numbering Plan promotes confidence in telephone services.

1.9 In this document, we discuss and invite stakeholder views on:

- **Geographic (landline) numbers**: the move to IP technology means that landline numbers will not be 'tied' to a local area, providing greater flexibility in how numbers are used. We consider how this might change the way landline numbers are dialled, and whether we should retain area codes and the location significance that they provide.
- **Non-geographic 084 and 087 numbers**: Our consumer research[5] has found low awareness and poor perceptions of value and trust for 084 and 087 numbers. Concerns about call costs, including uncertainty about those costs, may be a factor in reducing confidence in voice telephony. We look at what the future role should be for 084 and 087 numbers.

1.10 We also consider the consumer harm resulting from unexpected call costs and how these can lead to lack of trust in numbers and ultimately reduced confidence in voice telephony. Now that most calls made from landlines and mobiles are included in call allowances, consumers have become used to calls being 'free'. When practices relating to call prices lead to anomalies, there can be a detrimental impact. As part of our review, we plan to identify and address call pricing anomalies to establish a position where consumers can be confident about the cost of a call based on the phone number and the information that it conveys.

Next steps

1.11 We invite responses to this consultation by 20 June 2019.

1.12 In addition to engaging with stakeholders, we will also gather additional data to ensure a robust evidence base for formulating proposals, including seeking information from telecoms providers on their use of phone numbers.

1.13 We plan to consult on policy proposals later this year.

[5] *The Future of Telephone Numbering: a qualitative research study*, Futuresight for Ofcom, 2019. https://www.ofcom.org.uk/research-and-data/telecoms-research/general/future-of-telephone-numbering.

2. Background

2.1 Phone numbers are fundamental to how people and businesses use telephone services. They convey information to both telephony users and telecoms providers about pricing and about the calling/called party. They also provide information to telephone networks on how calls should be routed.

2.2 Ofcom is responsible for the administration of the UK's phone numbers. This duty is carried out as part of our regulation of the communications sector under the Communications Act 2003 ("**the Act**"). In particular, Ofcom is required by section 56 of the Act to publish the National Telephone Numbering Plan ("**the Numbering Plan**"), setting out the telephone numbers available for allocation and any restrictions on how they may be adopted or used. We must also keep day to day records of the numbers allocated in accordance with the Numbering Plan, known as the 'National Numbering Scheme'.[6] In carrying out our telephone numbering functions, we have a general duty to ensure that the best use is made of phone numbers and to encourage efficiency and innovation for that purpose.[7]

2.3 Telephone numbers are necessary to make phone calls work. Despite the growth of other forms of identifiers, including IP addressing, numbers will remain a key means by which consumers identify calling and called parties. There remains a key role for phone numbers well into the next decade and likely beyond. Their use will evolve, playing for instance more of a part in authentication, verification and call routing behind the scenes (for example, for access to messaging platforms such as WhatsApp).

2.4 It therefore remains important that numbers are available when needed and continue to mean something to those who use them. It is Ofcom's role to ensure this.

The Numbering Plan

2.5 The Numbering Plan is designed to provide information on the type of service and/or call cost associated with different types of numbers. It has been shaped over the years by the following factors:

- **Competition and choice.** Ofcom allocates large blocks of numbers to telecoms providers so that they can provide a wide choice of services to their customers (including end-users, other providers and resellers). Competition has driven many of the benefits that users of telephony services currently enjoy, while increasing demand for numbers from an ever-growing number of providers. We need to manage the Numbering Plan in a way that meets this increased demand, ensuring competition is not constrained by the availability of sufficient numbers and consumers' choice of telecoms provider will not be restricted when they want new phone services.

[6] *The National Numbering Plan* and *the National Numbering Scheme* are available on our website: https://www.ofcom.org.uk/phones-telecoms-and-internet/information-for-industry/numbering.
[7] Section 63 of the Act.

- **Technology**. The UK's Numbering Plan, like those around the world, has been shaped by the development of the PSTN.[8] The Numbering Plan and the National Numbering Scheme[9] need to reflect the capabilities of networks so that providers can handle calls correctly. PSTN networks have a limited capacity to analyse the digits of dialled phone numbers to extract (or 'decode') the necessary information for routing and tariffing of calls. This means that the minimum size of block that we can allocate to any network must be sufficiently large to accommodate these restrictions.
- **Service innovation.** The Numbering Plan has expanded over the years and has gone from including only landline numbers to providing different distinct number ranges as new types of services emerge. From the 1980s onwards, new number ranges have been introduced for such services as mobile, personal numbering, freephone and a variety of chargeable non-geographic call services.
- **Regulatory framework and European/International standards and specifications.** Ofcom regulates the electronic communications sector under the framework established by the Communications Act 2003. It also takes into account European and international standards and specifications.[10]

2.6 The Numbering Plan must evolve to continue to make best use of numbers and reflect developments in the above areas. For instance, with respect to technology, once networks are all-IP, without the decoding restrictions of PSTN networks, numbers could be allocated in smaller blocks, allowing them to be used more efficiently and subsequently allow them to be managed more dynamically.[11]

2.7 The Numbering Plan must also continue to provide the information needed to promote consumer confidence in telephony, through numbers providing service and/or reliable call cost information. This helps consumers to make informed decisions on whether to make or answer a call based on the phone number.

[8] For example, geographic telephone numbers (which today begin with the digits 01 or 02) where the first few digits relates to a UK area, were originally devised to allow a subscriber to automatically 'trunk dial' without needing a human operator to connect their national call. So, from the 1950s, a subscriber could dial a geographic telephone number to automatically instruct their local telephone exchange (say in Bristol) to switch them to a subscriber connected to a different telephone exchange (say in Glasgow).

[9] *The National Numbering Scheme,* Ofcom, see para 2.2.

[10] General Condition A2 sets out the standards and specifications that telecoms providers are required to adopt. They must also take full account of other European and international standards and specification as stated in General Condition A2.4. https://www.ofcom.org.uk/__data/assets/pdf_file/0021/112692/Consolidated-General-Conditions.pdf

[11] We are consulting separately on this development in *Promoting trust in telephone numbers*, First Consultation document published on 11 April 2019. https://www.ofcom.org.uk/consultations-and-statements/category-2/promoting-trust-in-telephone-numbers.

Ofcom's numbering strategy

2.8 In 2006 we reviewed how we manage telephone numbers ("**the 2006 Numbering Review**")[12] and set out our strategic decisions on how we would do this over the subsequent ten years or so.

2.9 We set the following policy principles to guide our numbering decisions as part of that review:

- the numbers consumers want are available when they are needed;
- the numbers consumers currently use are not changed if this is avoidable;
- the meaning which numbers provide to consumers is protected;
- number allocation processes support competition and innovation; and
- consumers are not avoidably exposed to abuse.

2.10 While these policy principles remain valid, we recognise that our last strategic review of numbering took place over ten years ago.[13] There have been several developments in voice telephony since then that may have an impact on the future use of numbers and how the Numbering Plan can promote consumer confidence in voice telephony. We discuss these below and consider whether they might require us to change the Numbering Plan to ensure that it continues to deliver on what consumers understand, want and need from numbers.

Developments in voice telephony that will shape our review of the future use of telephone numbers

Evolution of the UK's telephone networks

2.11 The UK's telephone networks will undergo substantial change in the coming years, as the companies that run them upgrade their technology. Some phone companies are already gradually moving their landline customers from the traditional PSTN telephone network to newer IP technology.

2.12 The change to IP networks will offer potential benefits to consumers, such as clearer phone calls, and it will help ensure the UK's landline telephone services are fit for the future. Although this change is being led by broadband and phone companies, Ofcom and

[12] Ofcom Statement *Telephone Numbering – Safeguarding the future of telephone numbers*, 2006. https://www.ofcom.org.uk/__data/assets/pdf_file/0014/51503/statement.pdf.

[13] In the intervening period, we have reviewed our policy for geographic and non-geographic numbers. For geographic numbers see: *Geographic telephone numbers: Safeguarding the future of geographic numbers*: three documents published on 25 November 2010, 7 September 2011 and 20 March 2012, http://stakeholders.ofcom.org.uk/consultations/geographic-telephone-numbers/ and the statement *Promoting efficient use of geographic telephone numbers*, 18 July 2012 https://www.ofcom.org.uk/__data/assets/pdf_file/0028/54964/numbers-statement.pdf.

For non-geographic numbers, see *Simplifying non-geographic numbers: final statement on the unbundled tariff and making the 080 and 116 ranges free-to-caller,* 12 December 2013 https://www.ofcom.org.uk/__data/assets/pdf_file/0017/72116/final-statement.pdf.

regulation have a role to play during this migration to promote competition, maintain consumer confidence in voice call services and protect consumers from harm. The migration also presents an opportunity for us to consider how we regulate telephone services to meet customers' changing expectations and needs, including how we manage phone numbers.

How this will shape our review of the future of numbers

2.13 Landline numbers are linked to local areas, with the first few digits of the number being associated with a geographic area code. This location significance is a consequence of the way the traditional landline technology works, with the number being 'tied' to the local exchange. However, IP technology does not need area codes to tell it where to send a call. IP technology uses the whole telephone number to determine how the call is routed whereas traditional 'switched' landline technology uses successive groups of digits to switch the call closer to its destination. Therefore, as we think about migration to IP networks, we consider how this might change the way landline numbers are dialled and whether we should retain area codes and the location significance that they provide. We examine this further in Section 3 of this document.

Alternatives to the phone bill as a micropayment mechanism for non-geographic call services

2.14 Non-geographic numbers beginning with 084, 087 and 09 are used by consumers to call a range of businesses and advice lines to get information and to make payments for services or products.

2.15 The concept and use of non-geographic call services numbers evolved in the 1980s and 1990s. At the time, they were an innovative solution for service providers offering non-location specific services, with flexible call routing for ease of answering (e.g. in different call centres), the convenience of having one number for contacting many locations and/or call agents, and special charging arrangements to cover or contribute towards the cost of providing the service at a time when such costs were not insignificant.

2.16 For consumers, the ability to make calls to such numbers and paying for the facility via their phone bill, with no other action required than ringing the number, offered a convenient payment mechanism.

2.17 However, the dynamics of service provision have changed since the introduction of these number types. The cost of providing a telephony service has reduced considerably and the innovative features are now commonplace. Calls to most other types of numbers are included increasingly in call allowances and could be regarded as 'free'. Furthermore, alternatives to using the phone bill as a micropayment mechanism for contacting service providers are more readily available, such as Apps, digital wallets and PayPal. Therefore, the payment of a 'premium' for what is often no more of a 'value-added' service than making contact by phone may be increasingly difficult to justify to consumers.

How this will shape our review of the future of numbers

2.18 We carried out consumer research ("**the Future of Numbering research**")[14] which found that low awareness, poor perceptions of value and mistrust were very evident for 084 and 087 numbers, particularly among older consumers. Younger participants were largely indifferent in their attitude to 084 and 087 given high levels of confidence in being able to avoid calling by interacting and transacting online instead.

2.19 In contrast, our research suggests widespread acceptance of the use of 09 premium rate numbers, particularly for high profile broadcast phone voting competitions. This is mainly because tariff information, along with ready to access terms and conditions, were perceived to be clearly stated leading to transparency and trust. Whether consumers use these numbers or not, they felt that they can make an informed choice.

2.20 Our review of the future of numbers seeks to promote consumer confidence in voice telephony, and our research suggests that concerns about call costs, including uncertainty about those costs, for calls to the 084 and 087 number ranges may be a factor in reducing confidence. Therefore, we consider it appropriate for us to look at the future role of 084 and 087 numbers. We examine this further in Section 4 of this document.

Changes in call prices

2.21 Call prices for consumers have become much simpler over the past decade as the cost of generating and carrying calls has fallen. The price of a landline call used to depend on distance; calls to and from a mobile were typically much more expensive. Now most calls made from landlines and mobiles are included in call allowances, this being the common type of subscription package offered by telecoms providers. However, for consumers who have become used to calls being 'free' (included in call allowances), when calls are charged for, this can lead to them experiencing unexpected or unreasonable charges.

2.22 Anomalies in call charges can have a detrimental impact on consumers, resulting in unexpected expense, lack of trust in numbers and ultimately reduced confidence in voice telephony.

2.23 An example of pricing anomalies is in the 07 number range. Most of these numbers are designated for mobile use, and there are significant irregularities in call prices.[15] Many providers set higher prices for calls to mobile numbers allocated to smaller providers and treat calls to mobile numbers allocated to providers in the Channel Islands and Isle of Man as international calls. However, consumers seeing these numbers would not be able to tell

[14] See paragraph 2.41.

[15] The exceptions being the 070 range, which is designated for Personal Numbering services, and 076 numbers, which are designated for Radiopaging services (apart from 07624, which is designated for mobile and paging services on the Isle of Man). On 1 October 2018 we published a Statement requiring wholesale call termination charges for calls to 070 numbers to be the same as the regulated mobile termination rate from 1 October 2019. We expect that this will result in 070 calls being treated the same as calls to mobiles, including being part of call allowances. Radiopaging services are typically used by calling communities that are aware of the likely charges, and in the case of companies, in some cases pay for the calls and receive the radiopaging service. We have little evidence of harm being caused by using numbers designated for radiopaging and do not consider any anomalies that exist in charges to be a priority for us to address.

that one 07 mobile number would be treated differently from another by their telecoms provider. When calling these numbers, consumers will generally expect calls to be treated as any other call to an 07 mobile number and be included in their call allowances. When calls to numbers that look similar are charged differently, there is a risk of consumer harm from bill shock or unreasonable charges.

How this will shape our review of the future of numbers

2.24 The Numbering Plan is designed so that phone numbers convey information to consumers about service and/or call cost, so we need to consider how it, and associated regulation, might need to evolve to continue to accurately provide this information.

2.25 As part of our review, we plan to identify anomalies in call prices that can result in unexpected or unreasonable charges. We will seek to address the causes of anomalies and will expect telecoms providers to consider appropriate action to protect their customers from irregular call charges. We want to establish a position where consumers can be confident about the cost of a call based on the phone number and the information that it conveys (along with any requirements on publication of call charges).

2.26 We also propose to look at revenue share rules in the Numbering Plan. Sharing revenue generated from calls to certain numbers (e.g. 03, 056 and 070 numbers) with called or calling parties is prohibited. This regulation is designed to protect telecoms providers from artificial inflation of traffic ("**AIT**"),[16] and provide incentives for other forms of misuse and fraud that may result from numbers being included in call allowances. The ability to make 'free' calls can incentivise schemes where calls are prolonged purely for financial benefit rather than a legitimate purpose. We need to ensure that the revenue share rules are functioning appropriately, which in turn would support the inclusion of number types in call allowances for the benefit of consumers.

Convergence of fixed and mobile services

2.27 The Numbering Plan provides distinct number ranges for landline (numbers beginning with 01 and 02) and mobile services (numbers beginning with certain 07 digits).[17] These separate number ranges were developed when the distinction between fixed and mobile networks and services were clear, with the use of different telecoms apparatus to make and receive calls.

2.28 The distinctions between what are perceived as mobile and landline services have become increasingly blurred. The traditional viewpoint that landline numbers contact a household or a person at home, whereas a mobile number contacts an individual who is 'out and about' no longer holds true. Services have developed that allow for call forwarding and termination of calls to any number on any device. More and more, consumers use mobile

[16] Telephony traffic which has no legitimate commercial purpose; where an activity causes calls to a service to be artificially generated or prolonged for financial benefit, and where the calling pattern would not have happened in the normal course of business.

[17] Mobile numbers begin with the digits 071-075 and 077-079.

phones to make calls from home in the way they might have done from a fixed line previously.

2.29 Instrumental in the convergence of the way consumers think about fixed and mobile services is that the choice of whether to make a call to or from either number type is no longer constrained by differences in call cost. This enables consumers to make decisions about calling based on other criteria, such as convenience or call quality.

2.30 The blurring distinction between mobile and fixed services suggests that organising telephone numbers around mobile and landline services will gradually have reduced relevance and meaning for consumers.

2.31 The Future of Numbering research found that:

a) there is a clear decline in the use of landline telephony, with its perceived value and importance increasingly limited to older consumers (particularly retirees), with many younger respondents (aged 16-21) reporting not to use landline phones at all;

b) while older consumers tend to use landline more than younger consumers, mobile ownership was widespread for this age group too, with some reporting to only use landline as a backup for emergency calls. Many reported reduced cost, and not just convenience, as a key driver in this move to mobile; and

c) younger consumers value and interact with numbers less than older consumers, tending to rely more on mobile and internet-based communications apps.

How this will shape our review of the future of numbers

2.32 The difference in termination rates is a factor in the case for preserving the distinction between mobile and landline numbers in the Numbering Plan. A telecoms provider's ability to ask for the higher termination rate is dependent on the use of a mobile number.

2.33 While these differences remain, it could mean that the economics of providing what are similar services could be influenced by the choice of number and hence the termination rate that applies. This could result in a distortion to competition or unreasonable charges.

2.34 We need to guard against telecoms providers having incentives to generate increased traffic to their networks solely for financial gain, if they can charge the higher termination rate for non-mobile services. Introduction of any increased flexibility in the types of services that may use mobile numbers would need to be in parallel with a convergence of wholesale prices to avoid a distorted choice of numbers. We therefore do not consider it an appropriate time to review the distinction between fixed and mobile number ranges in the Numbering Plan.

2.35 In the future, if fixed and mobile services continue the trend towards convergence, the case for greater harmonisation of fixed and mobile termination rates in future market reviews will likely be strengthened and we can consider any impact on the Numbering Plan at that time.

2.36 Also, relevant to our consideration of mobile numbers is our consultation document published in November 2017 on proposed changes to the Numbering Plan on how mobile

numbers may be used.[18] In that consultation, we explained that mobile numbers are most commonly issued by telecoms providers to customers for their mobile voice and data services, as a means of identifying the mobile handset used by the customer. However, mobile numbers are also used in connection with a wider set of services, including some that identify fixed apparatus which is used to provide the services in question. We had some concerns that this may put at risk consumers' understanding of the mobile numbers and the price they are likely to pay for calls.

2.37 The consultation gathered informative responses on how mobile numbers are used and raised some issues on the best way to implement our proposals for providing transparency to consumers on mobile number use and cost of calling. Having considered the responses, we decided that our proposal would have led to an over-simplification of the rules on mobile numbers and may have caused issues for some legitimate mobile number use. We concluded that to support innovation and competition, and to facilitate the provision of some services that require flexibility in how calls are terminated (i.e. not necessarily on a mobile device), we would not proceed with our proposal to amend the Numbering Plan. Instead we plan to act on anomalies in call prices that can result in unexpected or unreasonable charges, as set out in paragraph 2.25.

Developments outside the scope of this review

2.38 Our review of the future of numbers is focused on promoting consumer confidence in voice telephony. We are therefore limiting its scope to the types of numbers that consumers use to make and receive calls.

2.39 There are important developments relating to demand for numbering resources for non-interpersonal communications, such as machine-to-machine services, and for network functioning, such as Mobile Network Codes. We will consider separately whether a review of these types of numbering resources is required.

2.40 We will also continue to manage the Numbering Plan and any reviews of specific rules and regulations on an ad hoc basis.

Consumer research

2.41 In January 2019, we published our report, *The Future of Telephone Numbering: a qualitative research study* ("**Future of Numbering research**").[19] This report presented the findings of in-depth qualitative consumer research conducted by Futuresight on behalf of Ofcom. To update our understanding of number use in the UK, we wanted to assess what individuals and micro-businesses understand, want and need from telephone numbers. Specifically, we wanted to understand the value of location significance in geographic numbers and the use of non-geographic numbers as a micro-payment mechanism.

[18] *Clarifying how mobile numbers can be used by Communications Providers,* Ofcom consultation published 9 November 2017 https://www.ofcom.org.uk/consultations-and-statements/category-2/modification-national-telephone-numbering
[19] *The Future of Telephone Numbering: a qualitative research study*, Ofcom 2019 https://www.ofcom.org.uk/research-and-data/telecoms-research/general/future-of-telephone-numbering.

2.42 The research is significant for both Ofcom and stakeholders and has helped to form our early thinking on the future of numbers. We refer to the findings in more detail in Sections 3 and 4 of this document, which focus on the future of geographic and non-geographic numbers.

The Future of Fixed Telephone Services

2.43 In February 2019, we published our policy positioning statement *The future of fixed telephone services*.[20] This document set out the substantial changes taking place in the UK's telecoms networks, the roles and responsibilities of different organisations, and our expectations of telecoms providers as they make these changes. The document also set out Ofcom's role, the breadth of related work we are carrying out and an overview of when we will be working with other organisations on particular issues.

2.44 The statement also looked at our regulatory policy considerations on the future of fixed telephone services. It announced the forthcoming publication of three separate consultations seeking stakeholder views on the shape of regulation of voice in the future. This consultation is one of the three documents.[21] The other two consultation documents published on the same day are:

- *Promoting trust in telephone numbers*. This document makes proposals for industry to establish a common numbering database as a basis for verifying the identity of the calling number as well as considering other benefits in establishing such a database; and
- *Future of interconnection and call termination*. This document seeks views on the potential factors that should shape regulation of interconnection between networks during and after migration to IP, and potential options for future regulation.

This document and next steps

2.45 In this section we explained that we are looking at the future use of telephone numbers and have identified developments in voice telephone services that will shape this review.

2.46 In Section 3 we consider the future of geographic numbers.

2.47 In Section 4 we look at the future of non-geographic numbers.

2.48 We invite responses to this consultation by 20 June 2019.

2.49 In addition to engaging with stakeholders, we will also gather additional data to ensure a robust evidence base for formulating proposals, including seeking information from telecoms providers on their use of phone numbers.

[20] https://www.ofcom.org.uk/phones-telecoms-and-internet/information-for-industry/telecoms-competition-regulation/future-fixed-telephone-services.

[21] *Promoting trust in telephone numbers, First consultation*, Ofcom, 2019. https://www.ofcom.org.uk/consultations-and-statements/category-2/promoting-trust-in-telephone-numbers.
Future of interconnection and call termination, First consultation, Ofcom, 2019. https://www.ofcom.org.uk/consultations-and-statements/category-2/future-of-interconnection-and-call-termination.

2.50 We plan to consult on policy proposals later this year.

Consultation question

Question 2.1: We have set out developments in voice telephone services that are important in shaping our review of the future use of numbers to promote consumer confidence. Do you agree that these are the key considerations? Do you have any comments on our analysis of these developments? Are there any other developments or considerations that should be part of shaping this review, and if so, in what way?

3. Geographic numbers

Introduction to geographic numbers

3.1 Geographic numbers are fixed-line telephone numbers that begin with the digits 01 and 02, where the first part of the number forms the area code and contains geographic location significance. The UK is divided into 610 area codes.

3.2 When geographic area codes were first created in the 1950s, the first few digits correlated to the letters on a phone dial and were linked to where the local telephone exchange was physically based. Numbers corresponded to two-letter identifiers, such as AB (22) for Aberdeen. So today, Aberdeen's area code is 01224 ('01AB4'). The numbering system has changed several times over the years due to increased demand for numbers and to ensure conformity, losing some of this correlation. However, modern phone keypads still offer clues to how certain area codes first came about.[22]

3.3 Ofcom allocates geographic numbers to telecoms providers to deliver services to their customers, typically in large blocks of 1,000 due to technical routing constraints.[23] Although the quantity of numbers that telecoms providers hold exceeds the likely demand from end-users, individual telecoms providers need new allocations of geographic numbers from time to time to be able to offer their services. So even though the use of landlines might be declining, telecoms providers' demand for geographic number allocations continues to grow and these numbers remain important for service provision.

Strategic context

3.4 The 2006 Numbering Review set out principles about how telephone numbers would be managed.[24] The principles were translated into the following strategic statements on the management of geographic numbers:

a) we will take steps now to ensure the availability of geographic numbers for consumers in a manner that maintains their continuity and meaning, and causes consumers the least disruption and cost;

b) we will ensure that sufficient numbers are available so that scarcity of numbering resource does not create barriers to entry or service provision. Our management of numbers will be neutral in the treatment of telecoms providers;

c) tariff transparency should be retained, so that a caller pays what he/she expects to pay for a call to a geographic number; and

[22] A short summary of the evolution of the UK's geographic numbering plan is provided in Annex 1 of the Ofcom consultation document *Geographic telephone numbers: safeguarding the future of geographic numbers,* 25 November 2010, available at https://www.ofcom.org.uk/__data/assets/pdf_file/0028/55855/geographic.pdf.
[23] See paragraph 2.5, second bullet point.
[24] See paragraphs 2.8 and 2.9.

d) our policy approach will not hasten the erosion of location significance but will recognise (and not stifle) the effect of network and service evolution on that significance.

3.5 Changes in technology will impact on how phone numbers are used. Geographic numbers will no longer be tied to local exchanges and areas. IP phone technology does not need area codes to tell it where to send a call in the same way the traditional phone network does. This removes the need for geographic numbers from a technical perspective.

3.6 In this review, we consider whether the location significance associated with geographic numbers continues to have a value for consumers and businesses and whether it should be preserved following the migration all IP networks. Below we look at some of the issues involved.

'Out of area' use

3.7 Geographic numbers are usually assigned to people and businesses ('subscribers') with a landline whose network termination point is physically located within the geographic area associated with that number (having regard to the relevant geographic area code). PSTN networks use the area code digits to determine where to send the call and therefore this convention has been preserved.

3.8 The Numbering Plan provides for some flexibility in geographic numbers, allowing them to be used 'out of area', even outside of the UK. This is provided that the use meets the restrictions and requirements set out in the Numbering Plan.[25] There are two provisos: the customer must have specified a number with that area code and the cost of calling the number must remain associated with a call to a number with that area code as if the call terminated in that area.

3.9 There are several reasons why end-users might want to use a geographic number from an area different from their actual location. These reasons generally relate to the value that the end-user places on the number and its location. For instance, a number might be requested from a different area to give the impression of localness despite the called party being based elsewhere.

3.10 IP networks increasingly use this flexibility to offer 'out of area' and nomadic services to their customers. Migration to all IP networks opens the possibility of new service offerings from all telecoms providers that are more nomadic in nature, such as offering consumers a 'number for life' that goes with them wherever they move. Our Future of Numbering research suggests that younger consumers are more attracted to the possible move from fixed geographic numbers to a 'number for life'. This type of service offering would mark a significant departure in the UK's numbering approach, contributing to the erosion of location significance in geographic numbers.

3.11 Our current policy approach is that we will not hasten the erosion of location significance but will recognise (and not stifle) the effect of network and service evolution on that

[25] See Part B3 of the Numbering Plan for specific restrictions on the adoption and use of geographic numbers.

significance. We consider that the current rules in the Numbering Plan on the use of geographic numbers 'out of area' continue to be in line with this strategic principle and provides sufficient flexibility for IP and migrating networks to offer 'out of area' services if they wish to do so. The rules also ensure that tariff transparency is retained so that a caller pays what they expect to pay for a call to a geographic number, thus protecting consumers from unexpected or unreasonable charges.

Local dialling

3.12 The UK has what is known as an 'open dialling plan' to facilitate consumer dialling of local phone numbers. This means that calls between geographic numbers in the same area can be dialled without the first few digits (i.e. without the area code and by dialling the local subscriber number only). For example, in Edinburgh, consumers and businesses calling from one '0131' number to another do not need to dial the '0131' area code before the local number.

Obligation to provide local dialling in the Numbering Plan

3.13 The Numbering Plan includes an obligation for telecoms providers to provide the local dialling facility to their customers.[26] The exception is for six area codes where local dialling has been closed (we explain the reasons for this in paragraphs 3.19 to 3.26 below).

3.14 However, providers offering IP based services commonly do not offer the local dialling facility and for technical reasons require the whole landline number to be dialled, in the same way mobile phones need the caller to dial the complete number. This facilitates the nomadic nature of some IP based services.

3.15 We recognise that there may be technical feasibility constraints on the provision of the local dialling facility by IP service providers. As more providers migrate to IP technology, and new products are launched, an increasing number of landline services may be offered to consumers without the ability to dial locally without the area code.

3.16 We also understand that telecoms companies may welcome the opportunity to take individual decisions on whether to offer local dialling, be it across their whole customer base or on a customer-by-customer basis. This is particularly relevant now as providers consider their approach to customer migration to new IP products. Phone companies need to understand the future requirements of the Numbering Plan in terms of local dialling so they know what facilities should be taken into account when designing products and facilitating a positive migration experience for customers (e.g. by informing that as part of migration to IP the local dialling facility will be withdrawn).

3.17 However, our Future of Numbering research found little, if any, support for individual telecoms providers being allowed to decide on whether to provide local dialling or not. Most participants felt that this could be confusing and a burden on people to have to remember when they must dial the area code in the same area according to the phone company.

[26] See paragraph 3.1.2 of the Numbering Plan.

3.18 We must understand the extent of technical limitations in providing local dialling as networks migrate to IP technology so that we do not preserve a requirement in the Numbering Plan that is not technically feasible or unnecessarily onerous for telecoms providers to meet.

Addressing number scarcity

3.19 Over the last 15 years, as competition has grown, the number of telecoms providers has increased considerably, leading to more choice for consumers. This has also led to increasing demand for geographic telephone numbers. However, the stock of numbers available for allocation is limited and will start running out across more parts of the UK without further action.

3.20 In September 2011, we set out our approach for making more geographic telephone numbers available in specific area codes where we forecast that we will run out of existing number supplies.[27]

3.21 We decided that the best option for consumers, businesses and for competition between telecoms providers is to:

a) close local dialling; and

b) if, in future, further numbers are needed in that area, we would introduce an overlay code – which would mean that two area codes would serve the same geographic area.[28]

3.22 Closing local dialling makes local numbers beginning with the digits 0 and 1 available for use. For example, in the Aberdeen (01224) area code, this means numbers in the format '01224 **0**XXXXX' and '01224 **1**XXXXX' become available for use. Dialling the area code before the local number ensures that telephone networks do not confuse the new supply of local numbers with other number types and can determine how to route the call correctly. If the area code is not dialled, networks may not be able to determine whether a caller dialling a six-digit number starting with '0' is intending to call a local landline number or, for example, a mobile number (e.g. '07XXXX' could either be a local number or the first digits of a mobile number). Similarly, if the area code is not dialled before a local number beginning with '1', telephone networks could interpret the first few digits as either a local number or a call to a telecoms service such as '100' or '150', a network service such as '1471' call return or a service number such as '118XXX' directory enquiry number.

3.23 This solution does not require changes to any existing phone numbers, either where local dialling is closed or where it may later prove necessary to introduce an overlay code. The price of the call is not affected.

3.24 In 2012 we closed local dialling in the Bournemouth (01202) area code, and in 2014, in five additional area codes with forecast number shortages: Aberdeen (01224), Bradford (01274), Brighton (01273), Middlesbrough (01642) and Milton Keynes (01908). Therefore,

[27] *Geographic telephone numbers: safeguarding the future of geographic numbers*, Ofcom, 2011. https://www.ofcom.org.uk/consultations-and-statements/category-2/safeguarding-geographic-numbers.

[28] We have not introduced any overlay codes to date.

in all six areas the ability to dial local numbers without the area code from landlines is no longer available.

3.25 We were able to close local dialling in the six area codes with minimal disruption, through working with telecoms providers and ensuring an appropriate communications campaign. Our Future of Numbering research asked participants in Aberdeen (one of the six areas where local dialling has been closed) for views on local dialling. None expressed serious concerns about the change. Some were not aware that the change had even taken place. Among those who could recall the change, a few described it as initially a little inconvenient, after which they became quickly accustomed to it. Some reported that the way that the change was communicated helped to reduce any potential for annoyance or confusion, for example that the reason for the change (i.e. the least disruptive option for addressing number scarcity) was clearly conveyed, understood and accepted, and the change itself was well publicised.

3.26 Our current policy is to close local dialling only in area codes that require us to do so to increase the supply of numbers. We made that decision to minimise disruption as only callers in areas experiencing scarcity would be affected by the change in local dialling. So far, we have closed local dialling in six of the UK's 610 area codes. However, as demand for numbers continues to grow, shortages will become more common in more area codes and local dialling will need to be closed in an increasing number of areas.

Future of Numbering research on local dialling

3.27 The Future of Numbering research suggests that closing local dialling is not viewed negatively by consumers and businesses. The reasons for this are that:

a) local dialling is viewed as a marginal benefit;

b) it is only used in a small number of calls;

c) loss does not involve significant inconvenience or disruption; and

d) the benefit of avoiding a number shortage is valued.

3.28 Views on dialling landline numbers were similar across consumers, micro-business owners and other business users. Most made few or infrequent landline calls, so the ability to dial a local landline number without the area code was incidental. A small proportion made landline to landline calls very frequently for business/work purposes, so local dialling had some benefit. Overall, the majority used local dialling infrequently. Most tended to rely on stored numbers for friends and family and were used to dialling the whole number from a mobile phone anyway.

3.29 When asked to consider the value of the local dialing facility, some said that they were not aware of it, i.e. they 'always' included the area code when dialling (whether the number was local or not). Others considered it to be only a marginal benefit, i.e. it 'saved' dialling a few extra digits when calling a local number.

3.30 A shortage of numbers was viewed by most as a particularly compelling reason for closing local dialling. Avoiding a shortage (and, in so doing, avoiding any change in the area code

itself as a potential alternative measure for increasing number supply) was strongly preferred to the perceived minor benefit of not having to dial a local area code.

3.31 The evidence suggests that consumers understand the benefits of closing local dialling, do not find it significantly inconvenient and have not reported substantial difficulties post-closure in area codes where it has been implemented.

Should we close local dialling across the whole of the UK?

3.32 As part of our review of the future of numbers, we are considering our policy on how we approach local dialling in the future. Taking into account: i) the technical feasibility issues reported by IP providers in offering local dialling to their customers; and ii) the forthcoming need to close local dialling in more area codes to increase the supply of numbers, we are considering whether we should close local dialling in all area codes across the UK in a single action, rather than area by area as number demand requires.

3.33 A phased, targeted approach which closes local dialling in areas forecast to run out of numbers in the near term has the benefit that fewer consumers are directly impacted: consumers in unaffected areas can continue to dial locally without using the area code, causing them no disruption. It also means that communications regarding the change can be targeted in areas concerned, rather than requiring a higher-profile UK-wide campaign.

3.34 However, consumers may find this confusing: that stopping local dialling in some areas and not in others risks uncertainty regarding where you must use the area code for dialling locally and where you can dial without it. As more and more area codes need to be closed due to number scarcity, the chance of confusion increases.

3.35 Our Future of Numbering research suggests that consumer views differ as to whether closing local dialling should happen area by area (as numbers run out) or all at once (across all areas of the UK). In general, views among micro-business owners were more strongly expressed than those of consumers. Many micro-business owners held stronger views about the need to avoid any confusion in the need to dial the area code. Many consumers were also of the view that closure, area by area, could be confusing, and a possible burden to have to remember when and when not to dial in different areas.

3.36 By the same token, closure in all areas was viewed widely as less confusing, the ‘same’ for everyone and easier for all to get used to it. This is bearing in mind that many in the research sample did not feel they would miss local dialling in any event.

3.37 However, although closing local dialling in all area codes simultaneously was, on balance, favoured by most respondents, it was rejected by some. The main reason stated was that closure in areas where there was no number shortage was unnecessary. It was felt that there was no compelling reason to do it and, therefore, possibly an unnecessary expense to implement.

3.38 We are interested in stakeholders’ views on whether we should continue to close local dialling only in those areas where needed to increase number supply, or whether we should remove the facility across the UK entirely and require all calls to geographic numbers to include the area code. Either method would need to have a sufficient lead-

time for telecoms providers to plan and implement the change and for an appropriate communications campaign to inform consumers.

Location significance in geographic numbers

3.39 IP call technology does not need area codes to tell it where to send a call in the same way the traditional phone network does. As we plan for the migration from PSTN to IP networks, we need to consider whether we retain area codes and the location significance that they provide in landline numbers. This is not automatic in network migration, so we need to be clear on future regulation so that telecoms providers know whether to build area code significance into their plans.

3.40 While the move from PSTN to IP networks makes area codes redundant from a technical call routing perspective, we recognise that location significance may continue to have value for consumers and businesses. Therefore, we need to consider whether the Numbering Plan of the future should retain area codes.

3.41 Added to considerations on the future of location significance in geographic numbers, are questions around the continued reliability of that information. As mentioned in paragraphs 3.7 to 3.11, the use of numbers 'out of area' is permitted. This can reduce the value of location significance as the area code information might not correspond to the physical location of the called or calling party. On the other hand, the desire to use numbers 'out of area' (e.g. to give an appearance of being local) could be seen to testify to the continued value placed on location significance in the number.

3.42 However, despite the erosion of reliability of area codes, for many consumers and businesses, area codes still communicate something important about where the person calling or being called is likely to be located.

3.43 Our Future of Numbering research suggests that how consumers view the location significance of geographic numbers depends broadly on age and use of landline telephones. Younger consumers are largely indifferent to geographic location significance given low usage of such numbers and low engagement with landline telephones. Meanwhile, older consumers regard area code location identity highly, feeling it is helpful and generates trust in the owner of the number.

3.44 For businesses, views on location significance also differed. Local small businesses tended to value location significance highly, while businesses who conduct most of their trade online or want to appeal to a wide geographic area base valued location significance much less.

3.45 Across age groups, there was some concern about the impact of losing location significance on more vulnerable consumers. In particular:

a) that it could be confusing for older or vulnerable consumers given how strong the association of physical location and area codes is for certain consumer groups; and

b) that it could lead to an increased need to answer nuisance calls (when consumers cannot tell where the caller is calling from and cannot make decision on answering based on that information).

3.46 As landline telephone usage declines, geographic location significance in numbering is likely to continue to lose value to consumers and could eventually become both technically and culturally redundant. However, we recognise that geographic numbering might still have a useful role for many consumers and businesses – and will continue to do so for some years to come. We are seeking stakeholders' views on whether we should retain area codes in the Numbering Plan of the future.

Consultation questions

Question 3.1: What are your thoughts on the ability to dial local numbers from a landline without the area code? Do you think the local dialling facility has value?

Question 3.2: Do you think local dialling should be closed on an area by area basis as required to increase number supply or across the whole of the UK at the same time? Why do you think this?

Question 3.3: Do you have any views on allowing telecoms providers to make individual decisions on whether to provide customers with the ability to dial local numbers from a landline without the area code?

Question 3.4: For telecoms providers, what are your thoughts on the ability to implement the closing of local dialling in all UK area codes simultaneously?

Question 3.5: For telecoms providers, what are your views on the technical feasibility of providing local dialling to customers when offering an IP-based voice service?

Question 3.6: What do you consider are the important factors about geographic numbers? For example, is it the information they provide about the caller/called party? Is it familiarity, trust or confidence in call cost?

Question 3.7 What are your thoughts on retaining area codes in geographic numbers? Do you think location significance in geographic numbers has value and should be preserved? If so, why? How might your view change over time?

4. Non-geographic numbers

Introduction to non-geographic numbers

4.1 Non-geographic numbers are 'UK-wide' and not associated with a specific location. They cover a range of numbers and service types, including 03, 08 and 09 numbers that consumers use to call a range of businesses, financial institutions, helplines and government agencies to get information and to make payments for services.

4.2 There are other types of non-geographic numbers, including 070 Personal Numbers, 076 Paging Services and 118 Directory Enquiry numbers. We are not considering these types of numbers as part of this review.[29]

4.3 The first few digits of non-geographic numbers form a prefix designed to provide consumers with information about what they will be charged when calling the number. For example:

a) 03 numbers: these are charged at a geographic rate. This is the same price that the customer would pay to call a 01/02 geographic number, with calls to 03 numbers counting towards inclusive call minutes and included in any discount structures that apply to 01/02 geographic numbers;

b) 080 numbers (for example, 0800 and 0808): these numbers are free to call from mobiles and landlines;

c) 084 and 087 numbers: the cost of calling these numbers is made up of the telecom provider's Access Charge and a charge for contacting the service provider (the Service Charge). We explain this charging mechanism in paragraphs 4.11 to 4.15 below;

d) 09 numbers: the cost of calling these numbers is also made up of an Access Charge and Service Charge. The maximum service charge that can applied to 09 numbers is higher than that permitted for 084 and 087 numbers.

4.4 The Numbering Plan sets out the applicable tariff principles and maximum prices that may be charged for calls to non-geographic numbers. It also provides rules on whether revenue generated by the call may be shared with any called or calling party.

Strategic context

4.5 Non-geographic numbers evolved in the 1980s and 1990s to give organisations (the service provider) the opportunity to offer non-location specific services, with flexible call routing for ease of answering (e.g. in different call centres), the convenience of having one number for contacting many locations and/or call agents and the provision of special charging arrangements.

[29] In Section 2 we set out the developments in voice telephony that will shape our review of the future use of telephone numbers. We identified issues that impact the future use of 084 and 087 numbers as a micropayment mechanism. In this document, we focus our review of non-geographic numbers on 084 and 087 numbers.

4.6 For consumers, chargeable 08 and 09 numbers provide the ability to make calls to a service provider and have the payment for the service made via their phone bill, with no other action required than ringing the number. This offers a micropayment mechanism for accessing service(s).

4.7 The original arrangements for chargeable 08 numbers linked the cost of calling with the local and national rate distance-related prices associated with landline numbers. People had some awareness of these pricing structures from their experience of calling landlines. However, the way telecoms services are provided and charged for has evolved since the introduction of non-geographic numbers. We have considered on several occasions whether non-geographic numbers are being managed in a way that means consumers understand what service they are purchasing when they call a number, and at what price, so that they can make informed choices. We summarise these below.

4.8 In our 2006 Numbering Review, we undertook consumer research to understand consumers' general awareness of number ranges and their call costs. We found this to be low, particularly for numbers other than geographic 01 and 02 numbers and mobile 07 numbers. While consumers recognised broad relative cost differentials - for example, geographic numbers being the cheapest and 09 numbers the most expensive - there were also significant gaps in their understanding. Consequently, we decided to simplify 08 and 09 number rules so that consumers could better understand the price that they are paying and the service that they are receiving. We recognised there might be several steps in achieving this vision.

4.9 In 2007 we introduced 03 numbers: a new type of number offering a solution to businesses, public services and voluntary services that want a national non-geographic number but do not wish consumers to be charged a premium for contacting them. 03 numbers are charged at a 'geographic rate' – calls cost the same as calling a geographic 01/02 number and are included in call allowances in the same way.[30]

4.10 In April 2010, we began a review of the rules governing non-geographic calls services delivered to consumers using telephone numbers beginning with 03, 070, 08, 09 and 118.[31] One of the outcomes of this review was the introduction in July 2015 of a new tariff structure for revenue sharing ranges known as the 'unbundled tariff'. This charging mechanism consists of an Access Charge and Service Charge.[32] This was designed to provide callers with more transparency of the cost of the call and who gets the money.

[30] The designation for 03 numbers in the Numbering Plan is "*Calls charged at a geographic rate: calls charged at up to the same rate the customer would pay to call a UK Geographic Number, with calls to 03 numbers counting towards inclusive call minutes if the customer has remaining inclusive minutes to UK Geographic Numbers, and included in any discount structures that apply to UK Geographic Numbers*".

[31] Review of non-geographic calls services, 30 April 2010 https://www.ofcom.org.uk/consultations-and-statements/category-3/ngnservices.

[32] See paragraphs 4.11 to 4.15.

Current charging arrangements for 084, 087 and 09 non-geographic numbers

4.11 The unbundled tariff was intended to allow callers to see where the money that they pay for making the call goes. It consists of:

- the Access Charge, which is paid to the telecoms provider that originates the call; and
- the Service Charge, which is paid to the telecoms provider that terminates the call. The Service Charge may be shared with the called party (known as 'revenue sharing'), i.e. the company providing the service using the number (for example, a ticket booking agency or mail order company), to cover or contribute towards their costs of providing the service.

4.12 The Access Charge is set by the telecoms provider. A telecoms provider has a single Access Charge, covering calls to all unbundled non-geographic number ranges. It is set at a 'pence per minute' rate.

4.13 The Service Charge is set by the service provider receiving the calls. Each individual 084, 087 and 09 number has a single Service Charge that applies to calls to that number from all fixed and mobile phones.

4.14 The Numbering Plan sets out the maximum prices for Service Charges for 08 and 09 numbers. These are set as 'pence per minute' (where the Service Charge comprises or includes a pence per minute rate) and as 'pence per call' (where the Service Charge is set exclusively at a pence per call rate). The maximum Service Charge prices are:

- For 084 numbers: 7 pence per minute or 7 pence per call
- For 087 numbers: 13 pence per minute or 13 pence per call
- For 09 numbers: £3.60 per minute or £6 per call

4.15 Service providers must include the Service Charge in any advertising and promotion of calls to applicable numbers.[33] This requirement is designed to provide transparency to consumers on the cost of calling the number. An example below:

> Say your phone company charges you 5p per minute for calls to service numbers - that is their Access Charge. And let's say the Service Charge for a particular number you want to call is 20p per minute. In that case, you would see information like this:
> *"Calls cost 20p per minute plus your phone company's Access Charge."*
> In this example, the call would cost 20p per minute (the Service Charge), plus 5p per minute (the Access Charge). So, the call would cost you 25p per minute.

[33] *Numbering Condition binding non-providers*: https://www.ofcom.org.uk/__data/assets/pdf_file/0018/116532/Non-Provide-Numbering-Condition.pdf.

Understanding what consumers think about using non-geographic numbers

4.16 With a view to updating our understanding of how consumers understand, value and use non-geographic numbers, our Future of Numbering research included speaking to consumers and businesses about 08 and 09 numbers.

Summary of key findings in Future of Numbering research

Current use of non-geographic numbers

4.17 Our research found a general poor awareness, confusion and uncertainty regarding non-geographic numbers.

4.18 Compared to 08 chargeable numbers, 03 and 080 prefixes seemed familiar to many, particularly to older participants, but there was much uncertainty regarding the cost of 03, and considerable confusion relating to the cost of different 08 number ranges.

4.19 Some participants singled out 084, 087 and 09 as 'premium' and tended to assume that these numbers were costlier than the actual maximum rates allowable. Awareness and understanding of Access Charges and Service Charges were particularly poor.

4.20 The sight of 080 and 03 in an advertised context changed views of these prefixes to a considerable degree. The use of these numbers by high profile brands and organisations increased trust and the belief that they were either free or very low in cost. Uncertainty remained as to whether 03 was free or not. The lack of tariff information for 03 did not help to confirm that 03 was free or charged at a standard rate.

4.21 Sight of 084 and 087 in an advertised context worked much less to engender trust. Once understood (from accompanying tariff information) that these numbers were chargeable, distrust and resentment were widespread. Consumers were concerned that they were unable to determine the costs of such calls. This is based on not understanding their own phone company's Access Charges and an expectation that they could not control the length of the call.

4.22 There were differences in views on 084 and 087 numbers between age groups:

- younger consumers tended to be more accepting of these numbers, feeling able to avoid them by transacting online
- older consumers were less accepting, feeling they may have an unavoidable need to use 084/087 numbers. Typically, this was driven by a reluctance or low confidence in their ability to transact online and continued wish to have the choice to engage by phone.

4.23 A few in the sample expressed stronger views, that companies were seeking to 'make money' from people who either weren't aware of the costs up front or had no choice in having to make the call. Also, some younger participants expressed concerns that older and potentially vulnerable people may be caught out by call costs to 084 and 087 numbers.

4.24 One of the main reasons for mistrust and uncertainty regarding 084 and 087 numbers, particularly amongst older consumers, was low awareness of telecom providers' Access Charges. Many were surprised that the Access Charge applies on a per-minute basis and instead tended to assume that 'access' means a one-off connection fee.

4.25 Micro-businesses generally found the idea of using a 084, 087 or 09 number for their business as less relevant and appealing than geographic numbers. For most micro-business owners and other business users, the drawbacks tended to outweigh the benefits, leading to rejection. Many in the sample relied on local custom and considered a geographic number to be essential. The few who did not, said that they saw non-geographic numbers as 'anonymous' and 'impersonal' (implying lengthy call queuing, scripted responses from call handlers and with a base outside of the UK). The perceived drawbacks of 084, 087 and 09 numbers related mainly to the chargeable element. Micro-business owners considered that the cost would be off-putting to customers.

4.26 Participants' views of 09 numbers stood apart from 084 and 087, with widespread acceptance, particularly for high profile broadcast phone voting competitions. This is mainly because tariff information, along with ready to access terms and conditions, were perceived to be clearly stated leading to transparency and trust. 09 numbers provided an easy, convenient option to participate in TV voting for those who might not make use of free-voting and competition-entry via an app or online. Whether consumers use these numbers or not, they felt that they can make an informed choice.

Future scenarios for use of non-geographic numbers

4.27 Our research tested participants' views on future scenarios for use of chargeable non-geographic numbers. Firstly, we asked for views on keeping 084, 087 and 090 numbers as they are. Participants' views of this were very mixed with the main sample split by age.

4.28 Younger participants tended to accept the scenario. This was mainly because of the perceived ease of avoiding chargeable numbers and a strong preference to interact and transact with providers digitally. However, some younger participants argued the opposite, on behalf of others rather than themselves, i.e. older people (particularly their grandparents).

4.29 Older participants, and the less digitally savvy, tended to reject the scenario, and wanted instead to see changes. The main driver of this was a preference or reliance on the phone, particularly in situations where there was a need for dialogue and personal interaction.

4.30 Many felt that if they were 'forced' to call a chargeable number in order to purchase a product or service (especially one that needed advice) the charge may act as a barrier to engagement. In any event, many were unhappy with the difficulty in knowing which numbers were chargeable (particularly understanding the difference between 080 free to caller and 084/087 numbers) together with a perceived lack of transparency. Many expressed a fear that people can be easily caught out and forced to pay a charge (which was often assumed to be high, i.e. higher than the maximum call cost allowed).

4.31 Finally, participants were presented with two alternative scenarios for abolition. One was to abolish 084 and 087. The other was to withdraw 09 numbers as well.

a) in the short term, there were high levels of acceptance amongst consumers of the benefits of abolition of 084 and 087 number ranges; and

b) in the longer term, while our research suggests consumers widely reject the abolition of 09 premium rate numbers, there was evidence to suggest increasing levels of acceptance for abolition as micropayment technology continues to evolve over the coming years offering alternatives to the phone bill.

4.32 Abolition of 084 and 087 was argued for by many participants based on simplification and reducing confusion. As things stood, many claimed to be easily confused by cost differences between 080 (freephone) and 084/087 (chargeable) numbers leading to an increased risk of being charged unknowingly. In all, many felt that simplification would make it more likely that people would make calls based on an informed decision.

4.33 A minority of participants were against abolition of 084 and 087 numbers. Amongst some younger participants, the argument against related to fears that companies would seek to recover lost revenue in other ways, i.e., by adding to the cost of the product or service provided. Some older participants were also against abolition. The concern was that change could add to the confusion and risk of being inadvertently charged. They currently felt that they knew enough about chargeable numbers to be able to avoid them.

Future of non-geographic numbers

4.34 The results of our Future of Numbering research have provided a strong indication that consumers have concerns about the use of 084 and 087 numbers. Consumer confusion over call costs would appear to persist, despite the introduction of the unbundled tariff. There were also issues expressed around the use of numbers as micropayment mechanisms for contacting certain services. These concerns can lead to a general lack of trust in numbers, and ultimately reduced confidence in telephone services.

4.35 In addition to the consumer research, there are several developments that have led us to consider the future use of non-geographic numbers. We set these out below.

03 numbers as a non-geographic number alternative to 084 and 087

4.36 As explained in paragraph 4.9, we have introduced 03 numbers as an alternative non-geographic number range offering a solution to businesses, public services and voluntary services that want a national non-geographic number, but do not wish consumers to be charged a premium for contacting them.

4.37 We have established a clear path for existing 084/087 numbers to move to matching 034/037 numbers – only the digit ‘8’ after the leading zero needs to change to a ‘3’ - the rest of the number stays the same. This has encouraged many organisations to migrate to using 03 numbers.

Prohibition on certain call charges above basic rate

4.38 It is being regarded as increasing unacceptable for consumers to pay a premium for calling certain types of organisation or for making certain types of call. The Consumer Rights Directive 2017[34] states that consumers must not be charged more than a "basic rate"[35] for calls to post-sales helplines dealing with consumer complaints or questions. In other words, traders may not use numbers that include a premium in their charge (such a 084, 087 and 09 numbers) for the provision of such services.

4.39 Several bodies have set out rules on call costs. For example, the Financial Conduct Authority (FCA) has set a call charge rule for financial institutions.[36] Financial firms must not charge their customers more than basic rate for calling them, which is defined as "*the simple cost of connection and must not provide the firm with a contribution to its costs or revenues*".[37] As part of its call charge rule, the FCA confirms that basic rate means:[38]

- geographic numbers or numbers which are always set at the same rate, which usually begin with the prefix 01, 02 or 03;
- calls which can be free of charge to call, for example 0800 and 0808 numbers; and
- standard mobile numbers, which usually begin with the prefix 07, provided that the firm ordinarily uses a mobile number to receive telephone calls.

4.40 The FCA also confirms that the following numbers would not comply with its call charges rule:[39]

- premium rate numbers that begin with the prefix 09; and
- other revenue sharing numbers in which a portion of the call charge can be used to either provide a service or make a small payment to the service provider, such as telephone numbers that begin with 084 or 087.

The way calls are paid for has evolved

Inclusion of numbers in call allowance packages

4.41 The costs of most calls are included in call allowances within consumers' call packages. This is the most common type of subscription package offered to customers by telecoms providers. As a result, consumers used to calls being 'free', can experience unexpected charges when calls are charged for outside of call allowances.

4.42 Telecoms providers can decide whether to include chargeable numbers in their inclusive call allowances. Increasingly we are seeing this happen for more types of numbers, as providers act to make call charges simpler for their customers and prevent bill shock.

[34] Article 21, https://ec.europa.eu/info/law/law-topic/consumers/consumer-contracts-law/consumer-rights-directive_en.
[35] Basic rate here means equivalent to standard geographic rates (e.g. 01/02/03 numbers or mobile rates, or free to call).
[36] FCA Handbook*: The Financial Conduct Authority's Handbook of rules and guidance.* FCA, 2015. See Gen 7.2 Call charges: https://www.handbook.fca.org.uk/handbook/GEN/7/2.html.
[37] Gen 7.2.3 of footnote 36.
[38] Gen 7.2.4 of footnote 36.
[39] Gen 7.2.5 of footnote 36.

However, this does not necessarily remove the risk of consumer harm. Inclusion of calls with a Service Charge element in bundles may result in a rise in the overall cost of the call package for all customers, regardless of whether they call these numbers or not.

Alternative payment mechanisms

4.43 As explained in paragraphs 4.5 to 4.7, when the concept of non-geographic call services was introduced, they provided consumers with the ability to contact certain services by phone and pay for any premium for that facility via their phone bill, with no other action required other than ringing the number. This offered a convenient payment mechanism at that time. However, alternatives to using a phone bill as a micropayment mechanism for contacting service providers are now more readily available.

4.44 Payment for services can be made in a variety of ways. Distinct payments for the service provided can be made using, for example, credit or debit cards, Apps, digital wallets and PayPal. Payments for speaking directly with a service provider by phone can also be avoided by making contact or transacting in another way, such as online.

Use of 084 and 087 numbers is in decline

4.45 Organisations are moving their services to other number types to avoid making their customers pay a premium to call them and to avoid negative associations with call costs.[40] The result is that use of 084 and 087 numbers is in decline, both in terms of service providers using the numbers for calls to their service and in the quantity of calls made to those types of numbers.

4.46 As consumer use of 084 and 087 numbers declines, awareness of call costs is likely to reduce even further. This could lead to a greater incidence of bill shock, and a risk of less constraint on call charges. In turn, this risks an increase in harm from unreasonable charges.

Consumers want a simplified Numbering Plan

4.47 In recent years, Ofcom has pursued a policy of simplifying the use of non-geographic numbers. This is to secure, so far as possible, that consumers have an intuitive understanding of what particular non-geographic number ranges mean, in relation to the types of services provided and the likely cost of making a call to a number. For example, our review of non-geographic numbers[41] resulted in simplifying free to caller numbers, making 080 free from mobiles and landlines and withdrawing the 0500 freephone range from use in June 2017.

4.48 Our Future of Numbering research found a consumer need for more information and greater clarity on non-geographic number services and call costs, plus a degree of simplification. Most participants felt that there was a need to reduce the potential for confusion, particularly given the apparent similarity of 084 and 087 chargeable numbers and 080 free to caller numbers. Some, particularly older participants, suggested the need

[40] We intend to gather data on 084 and 087 number use from telecoms providers to inform our review.
[41] See footnote 13.

to abolish 084 and 087, leaving one freephone number (0800), standard rate number ranges (01, 02 and 03) and premium rate numbers (09).

Do 084 and 087 numbers still have value for consumers and/or service providers?

4.49 There may be legitimate reasons for maintaining 084 and 087 numbers as a micro-payment mechanism. For example, maintaining choice where a consumer prefers to make payment via a phone call as opposed to other means (such as giving card details over the phone). Also, some consumers may be in a position where they are unable to make contact or payment by alternative means, such as via an online platform if they do not have internet access.

4.50 Organisations have traditionally used the revenue share element of call charges to cover or contribute towards the cost of providing the service. While the cost of providing telephone services has reduced considerably and the innovative features of non-geographic call routing are now commonplace, service providers could still perceive charging a 'premium' for providing a service as justified. For instance, providers may be of the view that the Service Charge element of the call will contribute to the cost of a call centre agent to take a mail order over the phone. In choosing to use such a number, the service provider might want to provide: i) a disincentive for the customer to make the order by phone rather than online; and ii) want to attribute the cost of the call centre agent directly to the cost of the order for those customers who choose to place it by phone, rather than spread the cost to all customers.

Our review of the future of non-geographic numbers

4.51 Our review of the future of numbers seeks to promote consumer confidence in voice telephony. Our Future of Numbers research suggests that concerns about call costs, including uncertainty about those costs, for calls to 084 and 087 numbers may be a factor in reducing confidence. Therefore, we consider it appropriate for us to look at the future role of 084 and 087 numbers as a micropayment mechanism in the future.

4.52 Our research suggests widespread acceptance of the use of 09 premium rate numbers. Therefore, we do not propose to include their future use as part of this review.

Consultation questions

Question 4.1: What are your thoughts about 084 and 087 numbers? What are the benefits and/or disadvantages of contacting an organisation by calling an 084 or 087 number? Can you tell us of any experience you've had calling these numbers? Have you expressly chosen not to call a service that uses these numbers? If so, what led to that decision and how did you choose to make contact instead (if you did)?

Question 4.2: We are interested in hearing from people who use 084 or 087 numbers as a contact telephone number. If you use one of these types of numbers as a means of contacting your service, why did you choose to do so? What do you think about using these numbers in the future?

Question 4.3: For telecoms providers, we are interested in hearing from providers that offer services on 084 and 087 numbers to their customers. If you do, can you provide some examples of use cases? What benefits do you offer to organisations in using 084 and 087 numbers rather than other numbering options? For originating providers, do you have any customer experience of attitudes towards and views on calling 084 and 087 numbers that you can share?

Question 4.4: Are there changes to 084 and 087 number ranges that you think Ofcom should consider proposing to address the concerns highlighted in the research summarised in paragraphs 4.17 to 4.26?

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 20 June 2019.

A1.2 You can download a response form from https://www.ofcom.org.uk/consultations-and-statements/category-1/first-consultation-future-of-telephone-numbers. You can return this by email or post to the address provided in the response form.

A1.3 If your response is a large file, or has supporting charts, tables or other data, please email it to futureofnumberingteam@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.

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

Future of Numbering Team
Ofcom
125 Princes Street
Edinburgh
EH2 4AD

A1.5 We welcome responses in formats other than print, for example an audio recording or a British Sign Language video. To respond in BSL: Send us a recording of you signing your response. This should be no longer than 5 minutes. Suitable file formats are DVDs, wmv or QuickTime files. Or upload a video of you signing your response directly to YouTube (or another hosting site) and send us the link.

A1.6 We will publish a transcript of any audio or video responses we receive (unless your response is confidential)

A1.7 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.

A1.8 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.

A1.9 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.

A1.10 If you want to discuss the issues and questions raised in this consultation, please contact Eilidh Macdonald on 0131 220 8708, or by email to futureofnumberingteam@ofcom.org.uk

Confidentiality

A1.11 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.

A1.12 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.

A1.13 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.

A1.14 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

A1.15 This document seeks views from stakeholders on the future of telephone numbers and our review of the Numbering Plan to promote consumer confidence in voice telephony.

A1.16 In addition to engaging with stakeholders, we will also gather additional data to ensure a robust evidence base for formulating proposals, including seeking information from telecoms providers on their use of phone numbers.

A1.17 We plan to consult on policy proposals later this year.

A1.18 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

A1.19 Ofcom aims to make responding to a consultation as easy as possible. For more information, please see our consultation principles in Annex A2.

A1.20 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.

A1.21 If you would like to discuss these issues, or Ofcom's consultation processes more generally, please contact the corporation secretary:

Corporation Secretary
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 abig 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

We have included 12 specific consultation questions in Sections 2, 3 and 4. We would like you to consider these when responding. We have set these questions out below for ease of reference. We also welcome general comments.

Question 2.1: We have set out developments in voice telephone services that are important in shaping our review of the future use of numbers to promote consumer confidence. Do you agree that these are the key considerations? Do you have any comments on our analysis of these developments? Are there any other developments or considerations that should be part of shaping this review, and if so, in what way?

Question 3.1: What are your thoughts on the ability to dial local numbers from a landline without the area code? Do you think the local dialling facility has value?

Question 3.2: Do you think local dialling should be closed on an area by area basis as required to increase number supply or across the whole of the UK at the same time? Why do you think this?

Question 3.3: Do you have any views on allowing telecoms providers to make individual decisions on whether to provide customers with the ability to dial local numbers from a landline without the area code?

Question 3.4: For telecoms providers, what are your thoughts on the ability to implement the closing of local dialling in all UK area codes simultaneously?

Question 3.5: For telecoms providers, what are your views on the technical feasibility of providing local dialling to customers when offering an IP-based voice service?

Question 3.6: What do you consider are the important factors about geographic numbers? For example, is it the information they provide about the caller/called party? Is it familiarity, trust or confidence in call cost?

Question 3.7: What are your thoughts on retaining area codes in geographic numbers? Do you think location significance in geographic numbers has value and should be preserved? If so, why? How might your view change over time?

Question 4.1: What are your thoughts about 084 and 087 numbers? What are the benefits and/or disadvantages of contacting an organisation by calling an 084 or 087 number? Can you tell us of any experience you've had calling these numbers? Have you expressly chosen not to call a service that uses these numbers? If so, what led to that decision and how did you choose to make contact instead (if you did)?

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