Business messaging

Review of the A2P SMS termination market

Consultation

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Annex

1. Overview

1.1 Application-to-Person Short Message Service (A2P SMS) is the most common form of business messaging service. It enables businesses and public sector organisations to send text messages in bulk to customers and the wider public. Common examples of A2P SMS are one-time passcodes used to log into online banking, medical appointment reminders and parcel delivery notifications.

1.2 The market for A2P SMS messaging services grew strongly during the Covid pandemic, partly reflecting the growth in demand from the NHS, as well as increased use of digital services more generally. Since then, volumes have continued to grow and over 20bn A2P SMS were received by mobile users in the UK in 2023/24, in what has become an approximately £400 million a year market for mobile operators.

1.3 A2P SMS messaging services are used by many public and private organisations. The public sector (e.g. NHS and DWP) is collectively a large user of A2P SMS messaging services. Companies from a range of other sectors, such as finance, retail and leisure, also make substantial use of these services, including many SMEs, such as hair salons and restaurants.

1.4 Our message recipient research shows that A2P SMS messaging is highly valued by recipients, with nearly 70% of respondents who used a smartphone agreeing with the statement that "text messages (SMS) are a very useful way for me to receive messages from businesses/organisations". While other messaging communication channels are available – such as WhatsApp for Business and in-app notifications – our business sender research suggests SMS remains the primary channel for bulk business messaging and we do not expect other services to become effective substitutes in the short to medium term.

1.5 In order to send A2P SMS to their customers or to citizens, business senders (including public sector organisations) usually contract with a Messaging Service Provider (MSP). MSPs will then access the services of an Aggregator, who normally contracts with each of the four large mobile network operators (MNOs) – BT/EE, Three, Virgin Media O2 and Vodafone – and other Mobile Communications Providers (MCPs).[1]

1.6 Ultimately, for any SMS to be sent to a MCP subscriber, it is necessary for the MCP to terminate this message on the mobile number which they have been allocated. We characterise the provision of termination services provided by MCPs for A2P SMS as the wholesale market for A2P SMS termination.

1.7 There have been significant increases in the wholesale A2P SMS termination rates charged by some MCPs since 2021, in a range from 15% to 75%. These wholesale price increases are starting to translate into increases in retail prices i.e. the prices charged by MSPs to business senders for sending A2P SMS. These price increases prompted us to assess whether competition concerns may arise about the functioning of this market.

1.8 Ofcom has the power to impose certain regulatory conditions on communications providers that have Significant Market Power (SMP) in a specific market. We have not previously regulated SMS termination. However, we have carried out an assessment of the A2P SMS termination market and provisionally found that MCPs have SMP in this market, including

[1] In some cases, the same business will perform the functions of both Aggregator and MSP, but in other cases multiple businesses will be involved in the supply chain.

the ability and incentive to increase their termination prices to an excessively high level. Therefore, we are proposing to intervene by imposing a price cap.

What we are proposing – in brief

Our preliminary view is that there are 51 separate markets for wholesale A2P SMS termination, one for each of the MCPs allocated mobile phone numbers on which they terminate A2P SMS (or MCPs which are planning to do so during the review period).[2]

We consider that these MCPs have SMP in those corresponding markets. This derives, in part, from our assessment that there are currently no effective substitutes to A2P SMS messaging services in the retail market and an effective substitute is unlikely to develop during the proposed market review period.

We consider that, in the absence of intervention, the MCPs would be likely to exercise their market power by increasing pricing to an excessively high level.

To address the competition concerns we have identified, including the risk of these rates being set (and maintained) at an excessively high level, **we are proposing a price cap on the A2P SMS termination charges of each relevant MCP**:

- We propose applying the cap for **all A2P SMS termination**, both 'on-net' termination via Aggregators and for termination on interconnect routes between MCPs.[3] The cap would be set at the same level for both channels.
- The cap would be based on an average of 'on-net' December 2020 prices charged for termination by the four large MNOs (1.60p), equal to approximately **1.96p in September 2024's prices** (when allowing for inflation at CPI since 2020)[4] and going forwards it would be **adjusted by inflation**.

We propose that the remedy would come into effect at least three months after the publication of our final decision, scheduled for Q2 2025/26. For this market, we consider it appropriate to set a three-year review period, which we plan to run from 1 January 2026 to 31 December 2028.

We consider that by promoting competition in valued A2P SMS services these proposals will help enable private and public sector efficiency (e.g. by reducing missed appointments) while facilitating innovation in the business messaging market.

1.9 We invite comments from stakeholders on the proposals in this document. This consultation runs for ten weeks and the deadline for responses is **8 April 2025**.

[2] Each market includes ported-in numbers and excludes ported-out numbers.
[3] Termination of A2P SMS can either be provided directly to an Aggregator by the terminating MCP ('on-net') or indirectly, via another MCP receiving the message from an Aggregator and reaching the terminating MCP through the interconnect channel between the two MCPs ('off-net').
[4] To ensure higher precision of subsequent calculations, we will use four digits after the decimal point for this number (i.e. 1.9637p). The end result will then be rounded to two digits after the decimal point.

2. Background

2.1 This section provides an introduction to the business messaging market, and the central role of termination of the Application-to-Person ('A2P') Short Message Service (SMS) within it. It also outlines the scope and purpose of our review of the A2P SMS termination market, summarises the relevant legal and regulatory framework and sets out the structure of this consultation document.

A2P SMS is an important form of communication to consumers and citizens

2.2 The market for business messaging, or A2P, services has grown significantly over the last few years. These services are used by businesses – large and small – and public bodies, as an important form of communication with consumers and citizens.

2.3 A2P messaging services allow businesses and public bodies to send text messages at scale. Key use cases include sending one-time passcodes used to login to online banking, medical appointment reminders and parcel delivery notifications.

2.4 Most A2P messages are "one-way"[5] communications, in the sense that they provide information to the recipient but do not involve or anticipate a response from the consumer/citizen to the business/public organisation sender.

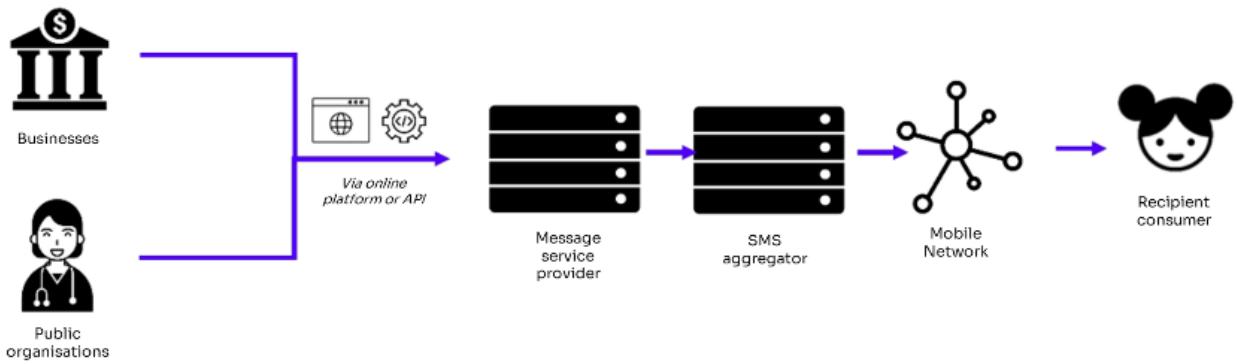
2.5 At present, business messaging in the UK mainly occurs via SMS over mobile networks. There are alternative forms of business messaging based on online communications services (OCS) such as WhatsApp for Business and in-app notifications sent by individual businesses to customers that have downloaded the relevant apps.

2.6 A2P SMS contrasts with Person-to-Person ('P2P') SMS messages, which are sent between individual users of mobile services, from one SIM to another through, or between, mobile networks. A2P SMS messages are originated through an online platform or pass through an Application Programming Interface ('API'). The online platform links to the relevant mobile networks and the messages are conveyed to their intended recipients. A2P SMS are finally terminated to the recipient's mobile number by the relevant mobile operator (A2P SMS termination services).

2.7 Businesses and public bodies usually need to send A2P SMS to many recipients, who between them are likely to be subscribers of multiple mobile operators. Therefore, these senders ultimately need to have access to the A2P SMS termination services offered by all mobile operators in order to reach all the people they want to message. They do this by buying the A2P SMS messaging services offered by Messaging Service Providers ('MSPs').

[5] As noted by the CMA in 2020, "A2P SMS can be used both when a response from the end customer is not expected (e.g. advertising and marketing) and when it is (e.g. customer satisfaction surveys or appointment scheduling), although the vast majority of A2P SMS communications are one way". See paragraph 31 of the CMA's merger decision of 21 October 2020 regarding the acquisition by Sinch Holding AB of the SAP Digital Interconnect Unit from SAP SE; available at: Sinch Holding AB / SAP Digital Interconnect Unit from SAP SE merger inquiry - GOV.UK.

Figure 2.1: How SMS messages are sent over A2P channels



2.8 We provide a more detailed description of the A2P SMS value chain in the market context section, but in summary it includes:

- Business senders of A2P SMS, including both businesses and public bodies (we hereafter refer to business senders as including messages from both businesses and public bodies);
- MSPs which provide business messaging services – including A2P SMS messaging services - directly to business senders;
- Aggregators which aggregate A2P SMS they receive from business senders and/or MSPs and buy A2P SMS termination from Mobile Communications Providers (MCPs);
- Terminating Mobile Communications Providers which are MCPs who receive A2P SMS messages for termination on the numbers they have been allocated by Ofcom (excluding ported-out numbers) and on their ported-in numbers. MCPs includes the four large mobile network operators (MNOs)[6] and other providers such as Mobile Virtual Network Operators; and
- Consumer/Citizen recipients who are the people receiving A2P SMS from businesses.

We have monitored the market and the impact of higher termination rates

2.9 In 2023, a number of Aggregators contacted Ofcom regarding increases in A2P SMS termination rates by mobile operators and the impact on the business messaging market, raising potential competition concerns.

2.10 On 25 September 2023, we wrote a letter to the four large MNOs, which was published on the Ofcom website.[7] The letter referred to the concerns which had been raised by Aggregators over increases in A2P SMS termination rates. We noted their concerns that these wholesale price rises - those paid by Aggregators to MCPs - did not appear to be constrained by competition and were being raised at short notice. We noted the potential impact on the retail business messaging market, given that these wholesale termination

[6] The four largest MNOs in the UK are BT/EE, Three, VMO2 and Vodafone.
[7] Ofcom. 25 September 2023. Letter to MNOs - Business messaging services and Ofcom's wholesale voice markets review 2026-31.

services are a key input to the retail services offered by MSPs who sell A2P SMS services to businesses and public organisations.

2.11 In our letter, we stated our intention to monitor the market for wholesale SMS termination and its impact on the retail business messaging market. We further outlined that, if market developments suggested a case for intervention, then we would be willing to commence a market review for SMS termination.

2.12 Over the last few months, we have conducted an information-gathering exercise to assist us in monitoring the market for A2P SMS termination and its impact on the retail business messaging market. In particular, between 23 May and 5 December 2024 we issued formal information requests to gather information from:

- The UK's four large MNOs, i.e. BT/EE, Virgin Media O2 ('VMO2'), Vodafone and Three;[8]
- Some larger Mobile Virtual Network Operators i.e. Sky, Lycamobile, Lebara and iD Mobile;[9]
- All other UK Mobile Number Range Holders;[10] [11]
- Some Aggregators/Messaging Services Providers, as both purchasers of SMS termination and as providers of business messaging services, i.e Cisco, Commify, FireText, LINK Mobility, IMIMobile, Infobip, MMG, Sinch, Stour Marine, Twilio and Vonage;[12] and
- Meta as a provider of alternative business messaging services (i.e. WhatsApp).[13]

2.13 These statutory information requests gathered market data and information including on the volumes of A2P SMS traffic, the wholesale termination prices charged by MCPs, the

[8] We issued statutory information requests to BT/EE, VMO2, Vodafone and Three dated 23 May 2024. These requests also gathered information about their provision of RCS Business Messaging services.
[9] We issued statutory information requests to iD Mobile, Lebara, Lycamobile and Sky dated 7 October 2024.
[10] We issued statutory information requests to (AQ) Limited, 08Direct Limited, 24 Seven Communications Ltd, Ace Call Ltd, Airwave Solutions Ltd, Andrews & Arnold Ltd, Anywhere Sim Limited, AQL Wholesale Limited, Bellingham Telecommunications Ltd, BlueWave Communications Limited, BT OnePhone Limited, CFL Communications Ltd, Circles MVNE International B.V., Citrus Telecommunications Ltd, Compatel Limited, Confabulate Limited, Core Communication Services Limited, Core Telecom Limited, FleXtel Limited, Fogg Mobile AB, Global Reach Networks Limited, Guernsey Airtel Limited, Hanhaa Limited, Home Office, HSL Messaging Limited, Icron Network Limited, IV Response Limited, Jersey Airtel Limited, JT (Guernsey) Limited, JT (Jersey) Limited, Lanonyx Telecom Limited, Magrathea Telecommunications Limited, Manx Telecom Trading Limited, Mars Communications Limited, Mass Response Service GmbH, Media Telecom Ltd, Mobile FX Services Ltd, Mobiweb Telecom Limited, Nationwide Telephone Assistance Ltd, Nodemax Limited, Pageone Communications Limited, Plus Telecom Limited, Premium Routing GmbH, Resilient PLC, Sark Telecom B.V., Simwood eSMS Limited, Sound Advertising Ltd, Spacetel UK Ltd, Spitfire Network Services Limited, Stour Marine Limited, Sure (Guernsey) Limited, Sure (Isle of Man) Limited, Sure (Jersey) Limited, Swiftnet Ltd, Synectiv Ltd, Syntec Limited, Tango Networks UK Ltd, Tata Communications (UK) Limited, Telecom 10 Ltd, Telecom North America Mobile Inc, Telecom2 Limited, Telesign Mobile Limited, Telet Research (N.I.) Limited, TeleWare Group Limited, TGL Services (UK) Ltd, The National Cyber Security Centre, Tismi BV, TP Global Operations Limited, University Of Strathclyde, Vectone Mobile Limited, Voicetec Systems Ltd, Voxbone SA, Wave Mobile Ltd, Wireless Logic Limited, Ziron Limited dated 24 September 2024.
[11] We issued a statutory information request to Gamma Telecom Holdings Limited dated 5 December 2024.
[12] We issued statutory information requests to Cisco, Commify, FireText, LINK Mobility, IMIMobile, Infobip, MMG, Sinch, Stour Marine, Twilio and Vonage dated 12 June 2024.
[13] We issued a statutory information request to Meta dated 31 July 2024.

retail prices for A2P messaging services charged by MSPs and on the availability and pricing of alternative business messaging services.

2.14 We also had meetings with MCPs, Aggregators and some public sector purchasers of A2P SMS messages during the course of 2024. In addition, we met with Google to better understand their role in the provision of alternative business messaging services.[14]

2.15 In addition, we commissioned two pieces of market research to gather evidence on the A2P SMS market from the perspective of business senders and consumer/citizen recipients:

- Business senders: Qualitative research on business senders' and public organisations' usage and perceptions of A2P SMS messaging, how they use this form of communication, and their usage and perceptions of alternatives to A2P SMS messaging; and
- Message recipients: Quantitative research to understand consumers' usage and perceptions of A2P SMS messaging, including how acceptable they believed it was to receive these messages for various purposes and how comfortable they would be to receive these messages in various scenarios, and usage and perceptions of alternative means of receiving business messages, such as WhatsApp.

2.16 Meanwhile, in Spring 2024, the four large MNOs informed their Aggregator customers of further increases in their A2P SMS termination prices.

2.17 In light of market developments over the last couple of years, and the evidence we have gathered from our market monitoring, we decided to commence this review of the A2P SMS termination market.

Purpose of our review

2.18 Since 2004 we have set SMP conditions to regulate Mobile Call Termination ('MCT') charges.[15] The regulation of MCT charges currently applies to all Mobile Number Range Holders (the mobile operators to whom Ofcom has allocated a mobile number range) that provide Call Termination Services, and fixes the maximum they can charge.[16]

2.19 We have not previously regulated SMS (as opposed to call) termination in any form as this market was not previously a source of competition concern. However, recent market developments and the evidence collected (including evidence gathered as part of our market monitoring) lead us to consider that there are potential competition concerns and consumer harm in the A2P SMS termination market. This A2P SMS termination market review aims to address these competition concerns and their potential impact on citizens and consumers by considering whether they could arise from the exercise of SMP by the MCPs providing A2P SMS termination, and if so, what should be done to address this market power.[17]

[14] We met with Google on 30 April 2024 to discuss Rich Communication Services (RCS). The meeting covered the potential opportunity for RCS in the UK, Google's role in the RCS eco-system, MNO pricing for RCS Business Messaging and future developments.
[15] Ofcom. 1 June 2004. Statement on Wholesale Mobile Voice Call Termination.
[16] Ofcom. 30 March 2021. Statement: Wholesale Voice Markets Review 2021-26.
[17] Ofcom also engages with the A2P SMS sector as part of its ongoing work on messaging scams and published a Call for Input, Reducing mobile messaging scams, in July 2024.

Legal and regulatory framework

Market review process and the legal tests for imposing SMP (services) conditions

2.20 Annex A6 provides an overview of our relevant statutory duties, the matters to which we must have regard in the exercise of our functions and the market review process.

2.21 In summary, the Communications Act 2003 (the "**Act**") enables us to impose certain regulatory conditions (the "**SMP (services) conditions**") on MCPs having significant market power ("**SMP**") in a specific market if the relevant legal tests are met.[18] In this case, the legal tests include:

- the three-criteria test under section 79(2B) for applying ex ante regulation;
- the section 47 tests for imposing an SMP (services) condition; and
- the section 88 tests for SMP (services) conditions about network access pricing.

2.22 We explain in Sections 5 and 6 why we consider that the SMP (services) conditions that we are proposing to impose would meet the relevant legal tests.

Our duties under the Act

2.23 We consider that our proposals also meet our duties in section 3 of the Act. These include our principal duty to further the interests of citizens in relation to communication matters, and to further the interests of consumers in relevant markets, where appropriate by promoting competition.

2.24 In particular, we are proposing to further the interests of citizens and consumers by setting regulation which is intended to:

- protect consumer and citizen recipients, as well as business senders, of A2P SMS messages from the risk of adverse effects arising from price distortions (e.g. excessively high wholesale A2P SMS pricing); and
- support the effective functioning of the retail business messaging market by encouraging competition and innovation.

2.25 We note that these objectives are in line with Ofcom's proposed priorities and plan of work for 2025/26, which include fast and reliable connections and services for everyone, everywhere.[19]

2.26 We consider that our proposals are also consistent with the requirement on us to secure, in carrying out our functions, the availability throughout the UK of a wide range of communications services. In particular, we consider that our proposals will help ensure that consumers and citizens will continue to be able to receive A2P SMS messages.

2.27 In performing our duties, we have had regard, in particular, to the desirability of promoting competition in relevant markets, the desirability of encouraging investment and innovation

[18] Sections 45 and 46 of the Act.
[19] This review is included in the project annex of Ofcom's proposed plan of work for 2025/26.

in relevant markets, and to the interests of consumers in respect of choice, price, quality of service and value for money.

2.28 We have also had regard to the principles under which our regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases where action is needed.

2.29 We consider that our proposals are also consistent with our duties set out in section 4 of the Act.

Strategic Statement position and the "growth duty"

2.30 As required by section 2B(2) of the Act, we have had regard to the UK Government's Statement of Strategic Priorities for telecoms, management of radio spectrum and postal services.[20] In particular, we have had regard to the following priority areas covered by the SSP: world-class digital infrastructure, furthering the interests of telecoms consumers and ensuring secure and resilient telecoms infrastructure.

2.31 In particular, we consider that our proposals would impose proportionate measures to further the interest of citizens/consumers. This will help ensure that private and public sector organisations - including small and medium sized enterprises (SMEs) and the NHS for example - will continue to be able to send A2P SMS messages at affordable prices to consumers and citizens that place value on receiving them.

2.32 In developing our consultation proposals, we have considered the importance for the promotion of economic growth of exercising our regulatory functions in a way which ensures that regulatory action is taken only when it is needed, and any action taken is proportionate, having regard to the "Growth Duty: Statutory Guidance".[21]

2.33 We consider that our proposed remedy will continue to allow MCPs to recover their costs associated with providing A2P SMS termination services, make investments in their networks and make a reasonable return on their investment. In addition, our proposed remedy will protect senders/recipients of A2P SMS messages from the risk of adverse effects arising from price distortions (e.g. excessively high wholesale A2P SMS pricing) and will facilitate continued growth in the retail business messaging market.

Impact assessments

2.34 Annex A6 summarises our duties in relation to impact assessments, including: (i) the impact assessment required under section 7 of the Act; (ii) the equality impact assessment and (iii) the Welsh language assessment.

Impact assessment – section 7 of the Act

2.35 Section 6 contains our impact assessment. In summary, we expect our proposals to have an overall positive impact for stakeholders, consumers and citizens, in particular by imposing a

[20] Department for Digital, Culture, Media & Sport. 2019. *Statement of Strategic Priorities* (SSP). The SSP for telecommunications, the management of radio spectrum, and postal services was designated on 29 October 2019, having been laid in draft before Parliament on 18 July 2019.

[21] Section 108 of the Deregulation Act 2015, and the Economic Growth (Regulatory Functions) Order 2017, the latter which was extended to Ofcom's regulatory functions by The Economic Growth (Regulatory Functions) (Amendment) Order 2024.

price cap which is intended to secure efficient and sustainable competition and thereby further the interests of consumers.

Equality impact assessment

2.36 We do not consider that our proposals will adversely affect any specific groups of persons. This includes persons that share protected characteristics under the Equality Act 2010, the Northern Ireland Act 1998 and groups of persons who we are required to have regard to the needs and interests of under section 3(4) of the Act.

2.37 We consider our proposals will support the market for A2P SMS messaging services. As a result, they could have a particularly positive impact on groups of people who own standard mobile phones that are not smartphones, as well as groups of people who are more likely to lack access to Wi-Fi at home, when compared to the general population, thus helping to advance equality of opportunity. These groups of consumers could be more reliant on receiving communications via A2P SMS, given their limited access to online messaging services. There is evidence suggesting that people over 65, disabled people and those on low incomes are more likely to fall into these groups of consumers.[22] Our A2P consumer recipient market research also found that over 65s and disabled people are more likely to receive A2P messages through SMS than the population at large (being at 79% and 76% respectively against an average of 70%).[23] We have also identified those receiving a high volume of communication from the NHS, such as those with long-term health conditions, as being potentially particularly likely to benefit from our proposals if they make use of the A2P SMS they receive from NHS senders.

Welsh language impact assessment

2.38 Our proposals relate to the A2P SMS termination market and its impact on the business messaging market, and therefore we do not consider our proposals would have any impact on opportunities for persons to use the Welsh language or treat the Welsh language less favourably than the English language. We also do not consider that there are ways in which our proposals could be formulated to have, or increase, a positive impact on the Welsh language.

Structure of this consultation

2.39 The rest of this document is structured as follows:

- Section 3 describes the relevant market context;
- Section 4 sets out our proposed market definition;
- Section 5 sets out our proposed determination of SMP and three-criteria test; and
- Section 6 sets out our proposed remedies and impact assessment.

2.40 This document is informed by the data collection we have carried out. This has included two research pieces into business senders and message recipients, A2P Business Sender research: qualitative report and A2P Message Recipient quantitative research, which are

[22] Ofcom. 16 July 2024. Technology Tracker 2024 Subset Data Tables, tables 40 and 53.

[23] Between 11-13 October 2024, Yonder Consulting conducted an online omnibus survey of 2,086 among UK adults (18+). See A2P Message Recipient quantitative research for more information.

published on Ofcom's website. The conditions that we are proposing to impose are set out in Annex A5.

Next steps

2.41 We invite comments from stakeholders on the proposals in this document. This consultation runs for ten weeks and the deadline for responses is 8 April 2025.

2.42 We aim to publish a Statement setting out our final decisions in Q2 2025/26.

2.43 This consultation will be followed by a separate consultation setting out proposals regarding the Wholesale Voice Markets Review 2026-31, which we plan to publish in Q1 2025/26.

3. Market context

3.1 This section provides background on the market for A2P SMS services, as well as other business messaging services. We first explain what business messaging services are generally, before explaining the value chain for A2P SMS specifically and then discussing the other services available in the business messaging market. We then discuss recent developments in the market, in particular how volumes and prices have evolved.

Business messaging services

3.2 As outlined in Section 2, business messaging services - or A2P - allow businesses and public bodies to send relevant communications to their customers and the wider public. This may include, for example, time-critical notifications, information about a service, and messages to facilitate authentication.

3.3 In recent years there has been significant growth in the use of A2P SMS messaging services. These services facilitate the sending of messages on behalf of business senders to arrive on the recipient's mobile phone as an SMS message. As a result, these senders make use of the services offered by MSPs and Aggregators in order to connect with MCPs who terminate the messages.

3.4 There are other potential ways in which businesses and public bodies can send communications to their customers and the wider public, including WhatsApp for Business, RCS Business Messaging (RBM), in-app notifications and emails.

Application-to-Person (A2P) SMS

3.5 In Section 2 we outlined the key participants in the business messaging market. We now provide a more detailed description of these participants within the wider A2P SMS value chain.

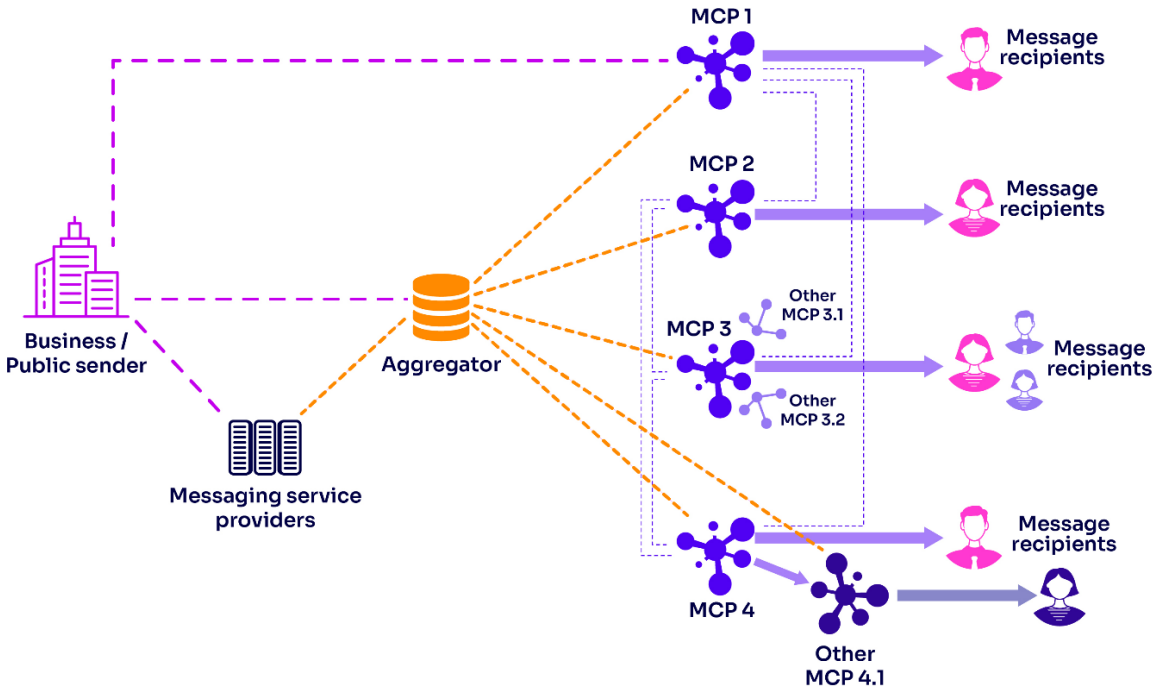
Overview of the value chain of A2P SMS services

3.6 Figure 3.1 below illustrates the value chain for the provision of A2P SMS services from business senders to the message recipients (i.e., the subscribers of MCPs, which includes both MNOs and MVNOs[24] as discussed further below).

3.7 In summary, business senders generate messages they wish to send via A2P SMS, and then contract with MSPs. The MSP either sends messages directly to MCPs (if it is also an Aggregator) or sends them on to an Aggregator to do so. The MCPs then terminate the messages to their relevant subscribers. We explain below which types of business senders tend to use A2P SMS services, as well as the different players in the A2P SMS value chain.

[24] An MVNO or mobile virtual network operator is a mobile communications provider that provides mobile telephony services to its customers, but does so by partially or wholly using the network of an MNO. Thick MVNOs own some core network elements, whereas thin MVNOs do not.

Figure 3.1: Value chain of A2P SMS services



Types of business senders that use A2P SMS services

3.8 A wide range of businesses and public bodies use A2P SMS services to efficiently send messages in real time to multiple recipients. For example:

a) NHS providers use A2P SMS to send various communications to patients, including GP appointment reminders, prescription updates and health tests result alerts;
b) HMRC uses A2P SMS for identification purposes e.g., multi-factor authentication;
c) some schools use A2P SMS to send messages to the parents of their pupils;
d) financial institutions (e.g., banks) use A2P SMS for various reasons including multi-factor authentication, balance alerts and transaction warnings;
e) some social media sites use A2P SMS for user identification and account alerts (e.g., when users access their accounts from a different device);
f) retailers/delivery companies use A2P SMS to update their customers on the status of their online delivery (including dispatch information and expected time of arrival);
g) restaurants, hair salons and other smaller businesses use A2P SMS to send booking confirmations and reminders to customers; and
h) businesses can use A2P SMS to send customer service questions and surveys to customers.

Providers of A2P SMS services

3.9 Providers of A2P SMS services in the value chain include the following:

a) MSPs and Aggregators; and
b) MCPs.

MSPs and Aggregators

3.10 MSPs[25] provide retail business messaging services, including A2P SMS services, to business senders. They can act as the intermediary between business senders and Aggregators, who procure SMS termination from terminating MCPs. They sell A2P SMS services to their customers, making use of a Communications Platform as a Service (CPaaS).[26]

3.11 Aggregators buy A2P SMS termination services from MCPs. These companies aggregate large volumes of text messages that originate from business senders (either directly or coming via an MSP) and distribute them to MCPs. Aggregators thus act as intermediaries between business senders (potentially via MSPs) who wish to use A2P SMS to communicate with their customers/service users, and terminating MCPs, who control access to the numbers assigned to the intended message recipients. Not all business senders acquire A2P SMS services directly from Aggregators, which is why sometimes business senders will contract with an MSP instead. However, sometimes an Aggregator will also act as an MSP – if they offer both retail services and purchase termination directly from MCPs.[27]

3.12 Using an Aggregator and/or MSPs eliminates the need for business senders to establish direct connections with multiple MCPs, in order to reach the intended recipients of their messages. Aggregators that also act as MSPs at the retail level informed us that contractual lengths with their business senders vary, with some contracts ongoing until terminated, and others lasting between 1 and 3 years.[28] Likewise, our business sender qualitative research[29] found that business senders used a range of MSPs and Aggregators. This research also indicated that some business senders tend to stay using the same Aggregator/MSP for several years.[30]

3.13 Aggregators can operate at different positions in the value chain. Specifically, Aggregators may use a direct connection to send A2P SMS to the terminating MCP, and therefore have a direct contractual relationship with it. Alternatively, the connection between the Aggregator and the terminating MCP may sometimes be indirect, through other Aggregators or via other MCPs (i.e. the interconnecting MCPs) that interconnect with the terminating MCP, as explained further below.[31]

3.14 There may be multiple businesses involved in the delivery chain of a single A2P SMS message, starting from an MSP who has the direct retail relationship with the business

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[25] MSPs offer a variety of business messaging services to their customers, including messaging platforms, Customer Relationship Management (CRM) integration, API integration, bespoke offerings and bulk SMS offers for SMEs.

[26] CPaaS is a cloud-based platform with APIs that allows businesses to embed chat, voice and video capabilities in customer-facing applications.

[27] For the avoidance of doubt, where an MSP is purchasing A2P SMS services from an Aggregator that is a different business entity, we are not considering it as being itself an Aggregator for the purposes of our proposed remedy.

[28] A2P SMS Aggregators' [✂] responses to question 5c of the information request issued on 12 June 2024.

[29] In July 2024, Context conducted one-hour depth interviews among 30 A2P decision makers from a range of organisations in the UK. The research aimed to better understand their experiences as A2P SMS users and evaluate the potential of alternative services as substitutes for A2P SMS. See A2P Business sender research: qualitative report for more information.

[30] Within the sample of 30 A2P business senders interviewed, the average time spent with their current SMS provider was 7 years.

[31] This is sometimes referred to as Tier 1 (where Aggregators have a direct contractual relationship with the MCP), or Tier 2, Tier 3 etc (where the connection to the MCP is not direct).

sender, potentially transferring that message to an Aggregator and then on to another Aggregator, before the message reaches the MCP used by the message recipient.

3.15 According to information we gathered,[32] as of May 2024, each of the four large MNOs had direct connections with around 10-20 Aggregators. In total, 32 Aggregators have a direct connection with at least one UK MNO. Typically, a smaller group of the largest Aggregators account for the majority of the A2P SMS traffic on each network.

3.16 Most of the MSPs and Aggregators we sought information from also offered other business messaging services alongside A2P SMS. Most commonly, Aggregators and MSPs offered business messaging services via online communications services (notably WhatsApp),[33] while others also offered A2P RCS as another means of allowing businesses to contact their customers.[34] However, one Aggregator indicated that A2P RCS had only been explored as a proof of concept.[35] Where MSPs and Aggregators offer these business messaging services, they similarly act as a conduit between the business sender and the messaging platform (and eventually the message recipient). In the sub-section below, we discuss in more detail the main types of business messaging services which are available alongside A2P SMS.

MCPs

3.17 MCPs offer a range of mobile services to their subscribers, which includes the ability to receive A2P SMS messages from business senders. In order to provide this service to their subscribers, the MCP needs to offer A2P SMS termination services to Aggregators and/or other MCPs.

3.18 We define MCPs as including the four large MNOs (BT/EE, Three, VMO2 and Vodafone), some smaller MNOs, as well as various types of Mobile Virtual Network Operators (MVNOs) of different sizes and business models.

3.19 Different types of MCPs may rely on different business models for the termination of the SMS messages to the numbers allocated by Ofcom to them. For example:

- For MCPs which are also MNOs, SMS messages to the numbers allocated to them are terminated on their mobile network. Some MCPs (e.g. many 'thin' MVNOs) do not have their own number allocation and instead provide their services through the numbers that have been allocated by Ofcom to an MNO and then sub-allocated to them by the relevant MNO, with whom they have a hosting arrangement.
- Other MCPs have their own number allocation and use an MNO with whom they have a hosting arrangement to terminate the SMS messages to the numbers allocated to them.
- There is a further category of MCP (e.g. some 'thick' MVNOs) that have their own number allocation and have the technical ability to control the termination of SMS messages to the numbers allocated to them, rather than completely relying on the MNO that provides other network services to them.

3.20 In this document, we sometimes distinguish between:

[32] See July 2024 Call for Input about "Reducing mobile messaging scams" (paragraph 3.6).
[33] [✂] responses to question 1 of the information request issued on 12 June 2024.
[34] [✂] responses to question 1 of the information request issued on 12 June 2024
[35] [✂] response to question 1 of the information request issued on 12 June 2024.

a) **Interconnecting MCPs**, which purchase termination from terminating MCPs (as defined below) in order to send A2P SMS traffic (often from Aggregators) to those terminating MCPs; and
b) **Terminating MCPs**, which receive and terminate A2P SMS traffic directly from Aggregators and/or indirectly from Interconnecting MCPs.

3.21 MCPs will often act both as Interconnecting MCPs and as Terminating MCPs depending on the relevant A2P SMS traffic and its destination.

3.22 In addition to MSPs and Aggregators, some MCPs are also involved to some degree in the provision of A2P SMS messaging services direct to business senders, though we do not consider them to be among the larger providers in the business messaging market as a whole, where there are many competing suppliers. For example, [✂] and [✂][36] provide an A2P SMS messaging service to business senders where they route messages, mostly through Aggregators, for technical delivery of the service.[37] [✂] has also provided a similar service in the past but in the last three years has moved away from contracting directly with business senders and now only retains a small number of legacy customers.[38]

SMS Termination is an essential part of the provision of A2P SMS messaging services

3.23 SMS termination is an essential part of the provision of A2P SMS services, because only terminating MCPs can deliver an SMS to the end recipient that subscribes to their service. When a terminating MCP receives the SMS message, they terminate the SMS on the recipient's device, charging the termination rate to the Aggregator or the interconnecting MCP from which the A2P SMS originated.

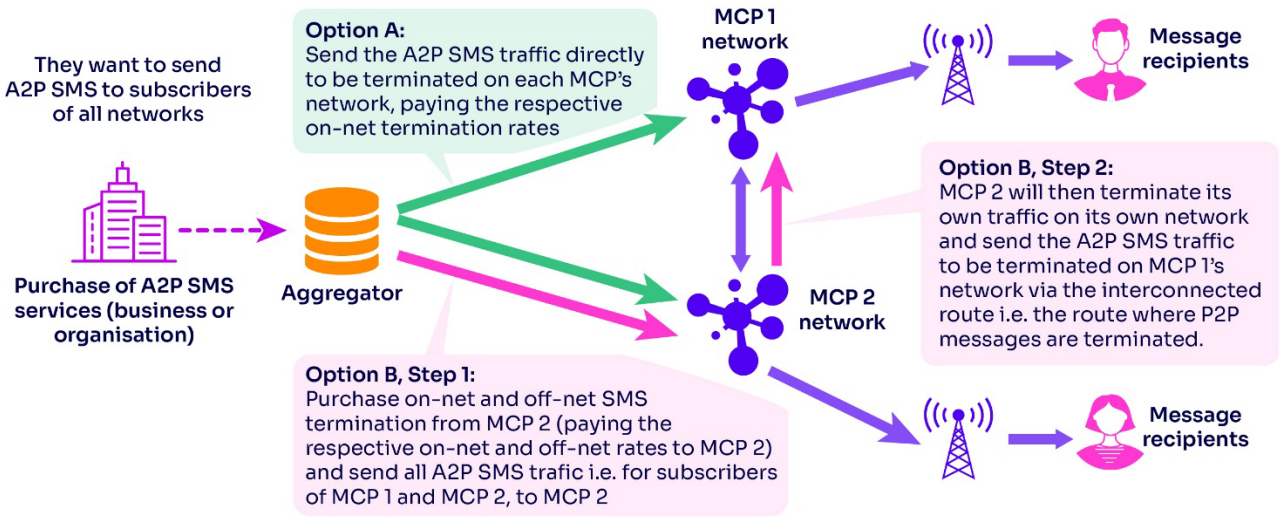
3.24 As mentioned above, A2P SMS do not usually originate from another network but more commonly from an Aggregator. Aggregators have two routes for procuring A2P SMS termination:

i) directly by purchasing A2P SMS termination from each terminating MCP (in which case they buy "**on-net termination**") or
ii) indirectly by purchasing A2P SMS termination from an interconnecting MCP (in which case they buy "**off-net termination**").

3.25 Off-net termination involves the A2P SMS traffic being forwarded by the provider of the off-net termination to the terminating MCP. In this case, the termination rate charged to that interconnecting MCP by the terminating MCP is typically called the "**interconnect rate**".

[36] [✂] response to question 9 of the information request issued on 23 May 2024
[37] [✂] response to question 1 of the information request issued on 23 May 2024.
[38] [✂] response to question 11 of the information request issued on 23 May 2024.

Figure 3.2: A2P SMS termination routes



3.26 Figure 3.2 shows the two routes through which Aggregators can purchase A2P SMS termination. For example, a business sender might contract with an Aggregator (perhaps via an MSP) to send a message in bulk to all their customers that are subscribers to MCP1 and MCP2. The Aggregator can choose to terminate all traffic directly to both MCP1 and MCP2; in this case, each MCPs' respective on-net termination rate will be charged to the Aggregator. Alternatively, there is a possible option for the Aggregator to route all traffic to MCP2 and rely on the interconnect between MCP2 to MCP1 to deliver traffic that must be terminated on MCP1. In this case, the interconnect rate will be charged by MCP1 to MCP2 and MCP2 is likely to add a small margin onto this in its off-net termination charge to the Aggregator. This option might be chosen if, for example, off-net termination is cheaper than on-net termination, which in turn is likely to be the result of the interconnect rate being lower than the respective A2P SMS on-net termination rate.

3.27 P2P SMS traffic also goes via the interconnect route between MCPs, but these are text messages sent between individual subscribers of the relevant MCPs. This is the route identified as 'Option B, Step 2' in Figure 3.2. Aggregators and MSPs do not play a role in providing P2P SMS services.

3.28 Aggregators also referred to resilience as a reason for using the off-net route as a 'back-up' option, should connectivity issues mean that messages are unable to be delivered via the on-net route.[39] We also understand that some A2P SMS messages may be delivered via this route as a consequence of mobile service customers porting their numbers and where outdated mobile network portability look-up data causes A2P SMS messages to be routed by Aggregators to the wrong network.[40]

3.29 We understand that terminating MCPs normally apply a single interconnect rate in relation to their termination of both A2P and person-to-person (P2P) SMS traffic coming from an

[39] [✂] responses to question 5b of the information request issued on 12 June 2024. The off-net route can also be useful when the Aggregator is uncertain about which MCP hosts the destination number, handing the message to an MCP who will be able to correctly route the message to its final destination.
[40] [✂] response to question 7 of the information request issued on 23 May 2024.

interconnecting MCP.[41] This means that A2P SMS traffic, when sent via the interconnect route, is currently charged at the equivalent level of the P2P interconnect rate.

Other business messaging services

3.30 A2P SMS messaging services are not the only channel business senders might use to send immediate communications to their customers or to citizens. The main types of business messaging services which are available alongside A2P SMS are Online Communication Services (sometimes referred to as 'Over-The-Top' services (OTT)), Rich Communications Services (RCS) and RCS Business Messaging (RBM), in-app notifications and emails. We outline these services below. In Section 4 we further discuss how each of these services compares against A2P SMS and whether they fall within the same market.

Online Communication Services including WhatsApp for Business

3.31 OCS are applications that provide an OTT service - defined as a type of service provided "over the top" of an existing data network connection such as a fixed or wireless broadband connection.[42] OCS are consequently not necessarily dependent on a mobile or telephone number in the same way as a traditional telephony service. They are typically 'walled garden' services, meaning they can only be used to communicate with other users of the same messaging service or platform. Examples include mobile VoIP calls, as well as messaging applications such as WhatsApp and Facebook Messenger.

3.32 According to Analysys Mason's estimates, OCS messaging volumes substantially exceed the P2P SMS volumes in the UK, with an estimated total volume of 1,300 billion messages sent via an OCS in 2022, compared to just 36 billion messages sent across SMS and Multi-Media Services that year.[43]

3.33 WhatsApp is a messaging application that can be downloaded on smartphones (and other internet-enabled devices) and allows for messaging between users of its service. WhatsApp is the highest reaching OCS application in the UK, reaching 87% of UK online adults as of May 2024.[44] WhatsApp is free to use for non-business purposes.

3.34 Although WhatsApp is primarily used for P2P communications in the UK, it also offers a potential means for businesses to send messages to their customers (if they are users of WhatsApp). WhatsApp for Business appears to be the largest provider of OCS business messaging in the UK, with 6 out of the 11 MSPs we issued information requests to providing it as a messaging channel alongside A2P SMS.[45]

3.35 WhatsApp for Business products include the WhatsApp Business App and the WhatsApp Business Platform. The former is designed for smaller businesses, building on the foundational infrastructure that supports the consumer app. It is meant to handle only a relatively small number of conversations and is free of charge for most small business users.

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[41] [✂] response to question 1 of the information request issued on 23 May 2024. Further, evidence collected in response to the RFI from the four large MNOs suggests that it is not possible to fully distinguish between P2P and A2P SMS volumes on the interconnect route (Footnote 129 in Section 4).
[42] Ofcom. 4 June 2014. Final statement on MCT review - Annex 15, page 5.
[43] Ofcom. 25 October 2023. Personal online communication services, page 10.
[44] Ofcom. 28 November 2024. Online Nation 2024 Report, page 5.
[45] Other OCS applications that have gained limited traction in the UK market but are used more widely in other parts of the world, including Telegram and Signal.

The latter is a platform for larger businesses, using APIs which can be integrated with businesses' backend systems, and is a paid-for service.[46]

3.36 In contrast to the approach taken by MCPs to charging for termination of A2P SMS per message, WhatsApp has been charging business senders per 'conversation', rather than per message. Conversations are message threads lasting 24 hours, and WhatsApp charges differing rates depending on the type of conversation:[47]

i) 'Utility' – follow-ups on user actions or requests. For example, these conversations are used to send messages about opt-in confirmations, order and delivery management, account updates or feedback surveys.
ii) 'Authentication' – enables businesses to verify users, for example with one-time passcodes to a previously established mobile number.
iii) 'Marketing' – any business-initiated conversation that is not a utility or authentication conversation is categorised as a marketing conversation. This allows businesses to promote new products, services, send out announcements or carry out targeted promotions.
iv) 'Service' – this is a user-initiated conversation that allows consumers to open inquiries with businesses.

3.37 WhatsApp made changes to its pricing for different conversation categories in 2024, with Utility and Marketing conversations having their price cut in the UK. Prices for Marketing conversations decreased by 25%, while prices for Utility conversation decreased by 44.7%.[48] Meanwhile, Service messages became free to send, and Authentication conversations remained at the same price.

Table 3.1: UK rates charged for conversations on WhatsApp Business Platform (January 2025)

Type of Message	Cost per Conversation (p)
Utility	1.59[49]
Authentication	2.59
Marketing	3.82
Service	0

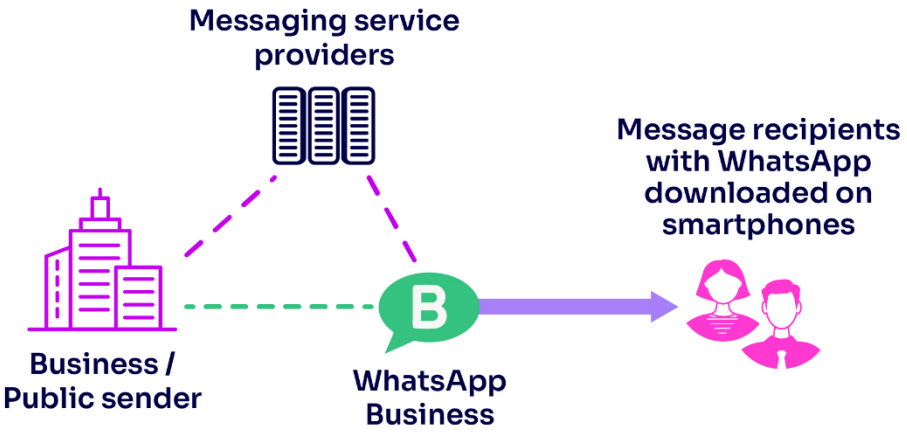
3.38 Meta has also announced that, from 1 April 2025 for phase 1 businesses and from 1 July 2025 for phase 2, business messages will be charged per message for Authentication and Marketing messages. It will also charge per message for Utility messages sent outside of a customer service window, which lasts 24 hours from a user sending an initial message to the business, with Utility messages sent within this window being free. This is a change to the current arrangement of pricing per conversation.[50]

3.39 Generally, WhatsApp for Business offers more functionality compared to A2P SMS. For example, it allows for longer text to be inserted and allows for multimedia messages to be

[46] Meta. The Difference Between WhatsApp and WhatsApp for Business | WhatsApp Business, accessed 6 December 2024.
[47] Meta. Business Platform Pricing | WhatsApp Business, accessed 8 December 2024.
[48] Meta. Pricing - WhatsApp Business Platform, accessed 9 January 2025.
[49] Rates for Utility conversations changed on 1 August 2024.
[50] Meta. Pricing Updates - WhatsApp Business Platform, accessed 11 November 2024.

sent. It also shows when someone is typing, and allows users to get read receipts. Moreover, it offers end-to-end encryption for all messages and the verification of business sender accounts.

Figure 3.3: Value Chain for WhatsApp Business messaging services



3.40 Figure 3.3 above illustrates the value chain for the provision of WhatsApp Business conversations from business senders to the message recipients (i.e., those with WhatsApp downloaded onto their smartphones). Businesses sometimes contract directly with WhatsApp in order to send messages, but many do so indirectly by procuring the service via MSPs, some of which offer it as an alternative or additional option to A2P SMS for some types of business messaging.

RCS and RCS Business Messaging (RBM)

3.41 RCS is a standardised communications protocol which enables consumers/citizens to receive messages with enhanced functionality via the 'native' messaging app on a smartphone, in a comparable way to SMS (as long as the user has an internet enabled phone and an internet connection).[51] Therefore, unlike WhatsApp, or other OCS, RCS does not require message recipients to download a separate application[52] and subscribe to a new service. RCS uses number-based routing and is available on most Android handsets and all iPhones with iOS 18 can support it, as long as MCPs enable the service for their subscribers.

3.42 RCS is IP based and while operators can operate RCS on their own through bespoke infrastructure and interconnection agreements with each other, it is easier to outsource the operation and interconnection to a third party. It offers functionality that is not available on SMS, including showing when someone is typing, allowing users to get read receipts, and allowing file sharing and multimedia messages including high-resolution photos to be sent.[53] It also allows for longer messages to be sent, and has verification for brands.

3.43 RCS has been in development since 2007 and the current UK operating model requires alignment in the value chain between mobile handset manufacturers, Google and MCPs (who will need to enable the service before subscribers are able to receive these

[51] For an overview of RCS see GSMA, Rich Communications Services, accessed 7 January 2025.
[52] This applies to Android users with Google Messages as their default messaging app.
[53] Google. RCS chats by Google FAQ accessed on 8 November 2024.

messages).[54] Although MCPs could implement their own RCS solution into their network, or access the services through another hosted solution, we understand that the four large MNOs in the UK currently outsource management of RCS to Google.[55] Google's Jibe Cloud platform allows RCS messages to be sent and received through Google's RCS backend over the internet, with delivery achieved using information including phone numbers, device identifier and SIM card numbers.

3.44 RCS Business Messaging (RBM) is the business-to-consumer version of RCS, allowing business senders to use RCS to communicate with their customers.

3.45 RBM pricing offered by MSPs/Aggregators to business senders is split across three levels for different types of messages:[56]

a) 'Basic' – messages of 160 characters or less, the current maximum length of an SMS message.
b) 'Single' – a longer single message, or one containing other media.
c) 'Conversational' – fully interactive messaging with suggested replies and reactions.

3.46 The RBM termination rates, which are charged to Aggregators, are set by MCPs. The four large MNOs told us Basic RBM termination is generally priced at a broadly comparable level with the relevant A2P SMS termination rate. Termination rates for Single RBM messages and Conversational RBM messages are higher than for A2P SMS, ranging from around [✂] to [✂] and from around [✂] to [✂] respectively.

3.47 There are [✂].[57]

3.48 Google told us, [✂].[58]

3.49 Until recently, lack of interoperability with Apple handsets appears to have been one of the factors holding back usage of the RBM channel by business senders. While RBM volumes have grown over the last two years, they represent a very small fraction of A2P SMS volumes (see below).[59]

3.50 As discussed above, Apple's iOS 18 has now implemented RCS compatibility, with MCPs across North America already enabling the service and MCPs in the UK in the process of doing so.[60] The impact this change will have on the relative importance of RBM as a channel for business messaging is unclear over a medium to long-term time period.

In-app notifications

3.51 Some businesses and organisations offer their own dedicated apps that allow their users to access their accounts and perform certain actions or to get information. These apps can then

[54] RCS was started by an international group of MCPs in order to develop a new communications protocol that could compete with OCS applications. In 2008, its development was taken over by the GSMA, an industry association, which launched a variety of initiatives, but these were fragmented and suffered from interoperability problems. Google acquired Jibe Mobile, a leading RCS provider, in 2015 and worked with the GSMA to develop a version of RCS that was compatible between MCPs.
[55] For information on collaboration with Google, see for example information from EE, Three, Vodafone, Virgin Media O2.
[56] See, for example, Sinch and Twilio
[57] Meeting between Ofcom and Google, 30 April 2024; email from Google to Ofcom, 20 January 2025.
[58] Meeting between Ofcom and Google, 30 April 2024; email from Google to Ofcom, 20 January 2025.
[59] Vodafone, BT/EE, VMO2 and Three's responses to question 12(a)(b) of the information requests issued 23 May 2024.
[60] BT/EE were the first UK MCP to enable the service and we understand that Three and VMO2 launched in December 2024. Vodafone are expected to follow.

be used by the relevant business to send notifications to their customers if they have downloaded the specific app. For example, banking apps can potentially be used for authentication purposes as required when making a transaction.

3.52 Some large public bodies also make use of in-app notifications. For example, the NHS said a total of 33.7 million people are subscribers to the NHS App, and the number of monthly logins was 25.8 million in November 2023.[61] Users of the NHS App can potentially access their medical records, book appointments and order repeat prescriptions. The NHS can use the app to send appointment and vaccination reminders, for example.

3.53 Businesses/organisations that wish to send messages to their customers first need to have developed and rolled out their app. To access in-app notification services, users need to first download the relevant apps and will be required to do so for each relevant app from each relevant business. Additionally, unlike A2P SMS, in-app notifications rely on people downloading multiple apps from each potential business sender that they wish to receive notifications from. If a potential recipient has downloaded the relevant app, that individual would also need to have access to the internet, to have enabled the app to send push notifications, and/or to regularly check the in-app notifications, in order to receive these communications in "real time" in a way comparable to SMS.

Email

3.54 Email is another commonly used means for business senders to send communications to their customers. One of the advantages of using email is that it allows instantaneous delivery of messages conveyed in this form. However, in order to be comparable to SMS, it requires the recipient to have enabled push-notifications on their mobile devices to be immediately aware of new messages, or to very regularly check their inbox. Email recipients also need to have access to Wi-Fi or mobile data in order to access their emails from business senders.

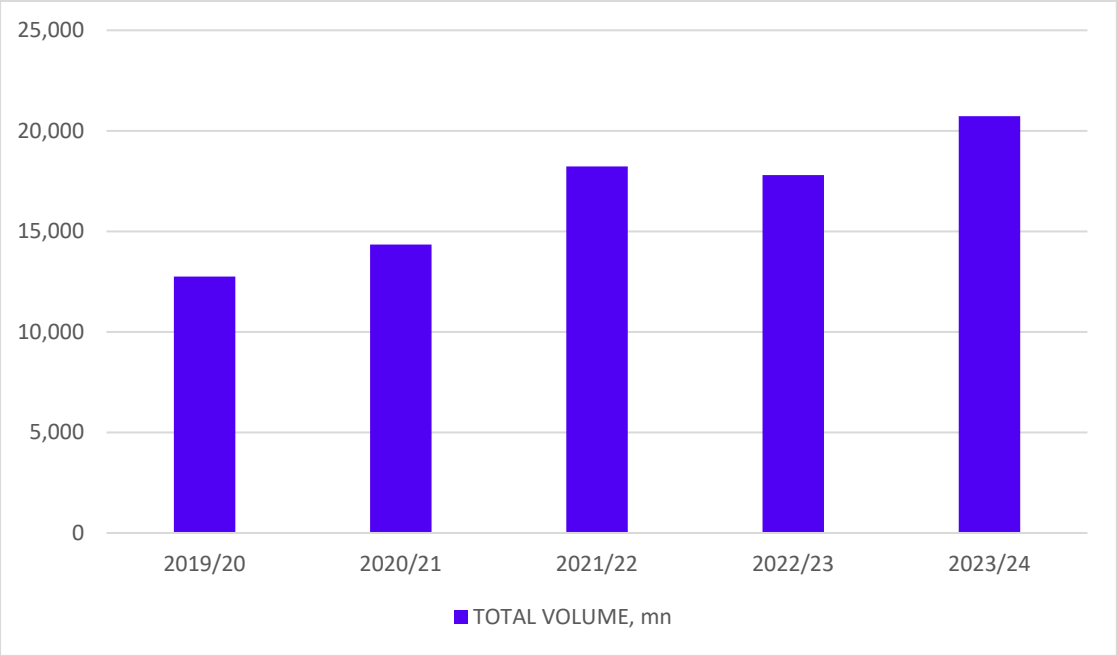
Developments in the business messaging market

Volume increases

3.55 A2P SMS messaging volumes have increased substantially in recent years, in particular since the start of the Covid-19 pandemic, and have since remained above their pre-pandemic levels. This is likely a result of a general move by business senders towards increased digital communications including, for example, an increase in NHS A2P SMS messaging. Analysys Mason reported Covid-19 led to a permanent and increased demand for A2P SMS messaging due to the wide use of A2P SMS messaging by governments to communicate healthcare warnings, stay-at-home notifications and vaccination promotional messages.[62] Notify, a UK Government digital communications platform, sends an average of 3 million A2P SMS per day to citizens on behalf of a range of UK public bodies.[63]

[61] NHS England. 27 December 2023. NHS App reaches record users on fifth anniversary.
[62] Analysys Mason, February 2023, Application-to-person messaging: worldwide trends and forecasts 2022–2027, p6.
[63] See Notify's tender for services in September 2024. Their webpage also provides daily use statistics, see https://www.notifications.service.gov.uk/features/performance.

Figure 3.4: Total annual A2P SMS termination volumes for the four large MNOs

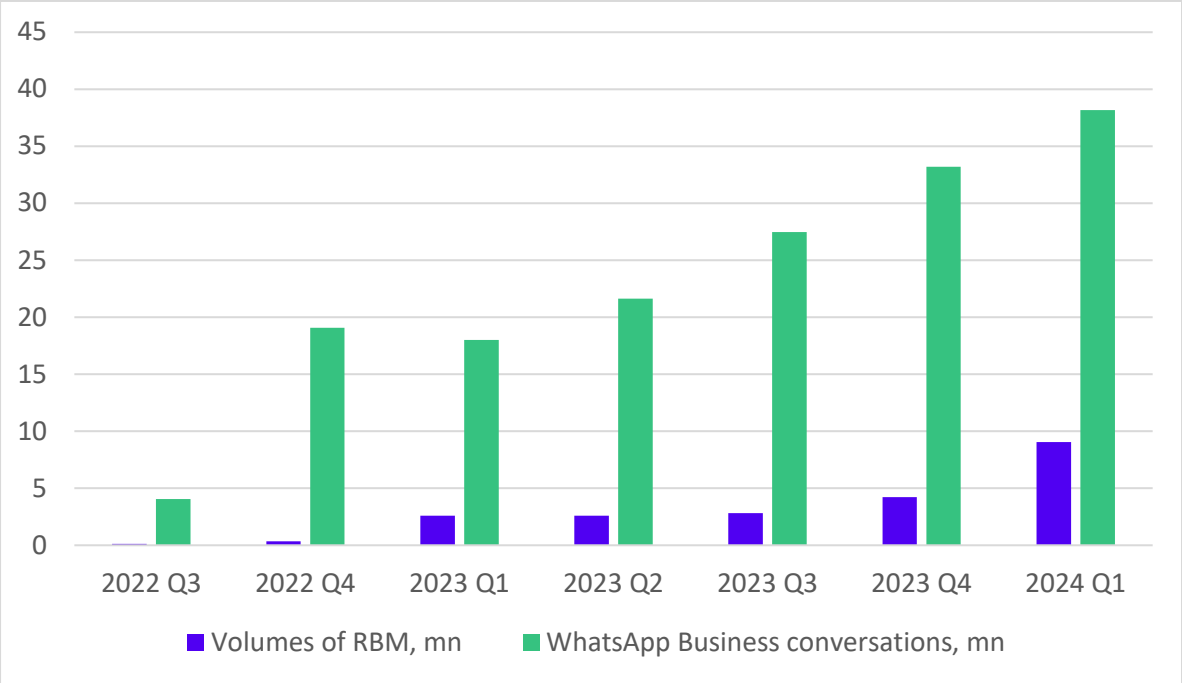


Source: Ofcom analysis of MNOs responses to RFI.

3.56 Figure 3.4 summarises the evolution of A2P SMS termination volumes over the last five years. We found that the aggregate volumes of A2P SMS terminated by the four large MNOs has risen by 63%[64] since 2019/20, reaching over 20 billion in 2023/24.

[64] Ofcom analysis of MNOs' responses to question 2 of the information request issued on 23 May 2024. Volumes include MVNOs' volumes where they use the relevant network.

Figure 3.5: Quarterly RBM Messages and WhatsApp Business conversations volumes (mn)



Source: Ofcom analysis of the four large MNOs' (for RBM) and Meta's (for WhatsApp) responses to the information requests.[65]

3.57 Figure 3.5 summarises the evolution of RBM Messages terminated by the four large MNOs and WhatsApp Business conversations volumes over the last two years. This chart shows that volumes for both of these messaging services have increased from very low bases. The volume of WhatsApp Business conversations reached just below 40 million in 2024 Q1, with RBM volumes remaining much lower at just below 10 million. Although volumes for both of these messaging services have increased significantly over the last two years, volumes for A2P SMS remain much larger and are still growing, WhatsApp for Business and RBM volumes being circa 0.002% and 0.0005% of those of A2P SMS.

A2P SMS termination price increases

3.58 There have been significant increases in the A2P SMS termination rates charged by the four large MNOs since Q4 2021. Figure 3.6 shows how the lowest and the highest standard on-net prices of the four large MNOs evolved between 2019 Q2 and 2024 Q2.[66]

3.59 [✂] first increased its A2P SMS on-net termination rates in 2021 Q2, and the other three large MNOs increased their rates during the subsequent years. There have since been several price increases by all of the four large MNOs. In particular, we observe significant increases from 2023 Q2 onwards by all four MNOs. In total, A2P SMS on-net termination rates for the four large MNOs increased in a range between over 15% and less than 75% in just under three years.

[65] Ofcom analysis of the four large MNOs' (RBM) responses to question 12a of the information request issues on 23 May 2024 and Meta's (WhatsApp) responses to question 10a of the information request issued on 31 July 2024.

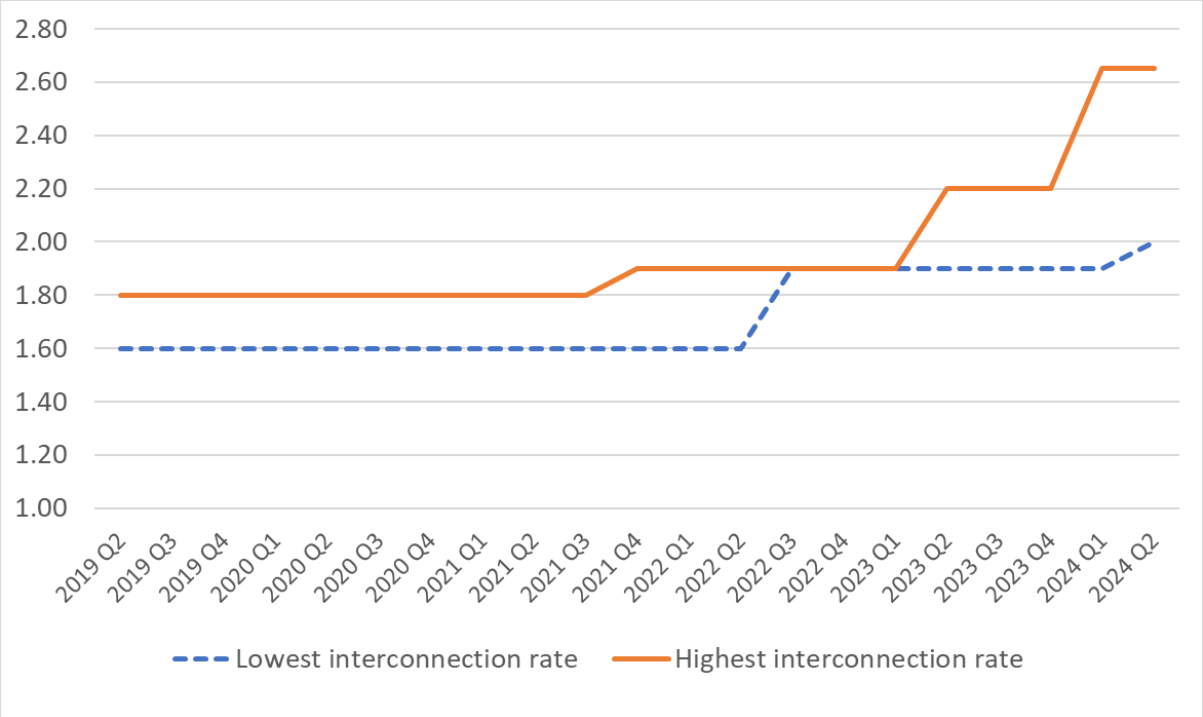
[66] Where an MNO's standard prices depended on the volume and had a lower and upper value, we took a midpoint for the purposes of the chart.

Figure 3.6: Changes in lowest and highest standard A2P SMS on-net termination prices across the four large MNOs

Source: Ofcom analysis of four large MNOs' data.

3.60 A2P SMS termination rates for traffic using the off-net route also increased for all four large MNOs during the same time period, reflecting increases in their interconnect rates (which also apply to P2P SMS termination). Figure 3.7 shows how lowest and highest interconnection rates between BT/EE, Three, VMO2 and Vodafone changed from 2019 Q2 to 2024 Q2. These rates were stable at about 1.6p-1.8p until 2021 Q4 after which there was a number of price increases. As of 2024 Q2, there is a larger divergence between these rates, the highest rate of [✂] applies where the interconnect involves [✂], and the lowest being [✂] for the interconnect between [✂] and [✂]. Broadly, there is a similar pattern of price increases for both interconnect rates for SMS between the four large MNOs and the A2P SMS on-net termination rates charged by these MNOs.

Figure 3.7: Interconnect rates for SMS between four MNOs, lowest and highest, p/message.



Source: Ofcom analysis of MNOs' data.

3.61 In Section 4 we discuss how these increases in the cost of termination through the interconnect route have fed through to increases in A2P SMS off-net termination prices.

3.62 We observe that aggregate volumes of A2P SMS have continued to increase despite material increases (of circa 50%) in the average termination rates charged by the four large MNOs. For example, for one MNO ([✂][67]) overall volumes increased by around 6% during 2022 and by around 5% during 2023, despite their price increases during this period.

Price increases for A2P SMS messaging services

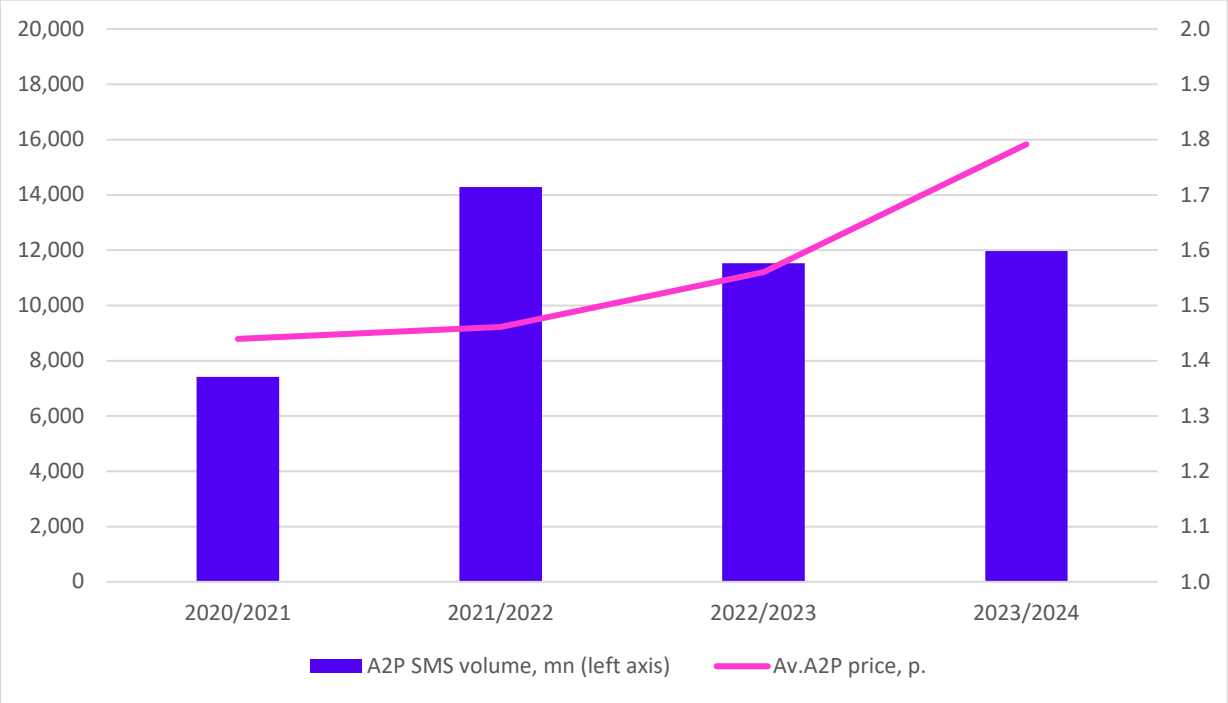
3.63 Increases in A2P SMS termination rates by the four large MNOs have been followed by increases in the wholesale prices charged by Aggregators to MSPs and the retail prices charged by MSPs to business senders. As termination is the main cost in the provision of A2P SMS services [✂][68], any substantial increase in termination prices is likely to have an impact on the prices charged by Aggregators/MSPs.

3.64 However, the overall impact on prices for A2P messaging services is not straightforward, varying between Aggregators. The prices offered by Aggregators often reflect the costs incurred from a composite of the A2P SMS termination rates of all MCPs. Alternatively, some Aggregators ([✂], [✂][69]) choose to charge different prices depending on which MCP the A2P SMS is terminated on.

[67] [✂] response to question 7 of the information request issued on 23 May 2024.
[68] Ofcom analysis of Aggregator [✂] responses to information request (questions 5h and 6b) issued on 12 June 2024.
[69] Ofcom analysis of Aggregator [✂], [✂] responses to question 7a of the information request issued on 12 June 2024.

3.65 Aggregators informed us that they generally have little choice but to pass on the termination price increases to their customers.[70] However, in some cases, for high volume customers, Aggregators have partially absorbed some of the increases and not passed on all their higher costs.[71]

Figure 3.8: Total A2P SMS service volumes and Average A2P price for six Aggregators



Source: Ofcom analysis of Aggregator data.

3.66 Figure 3.8 shows how the average A2P SMS price offered by six Aggregators[72] to their top 20 customers has increased over the last four financial years from 1.4p to 1.8p. These prices relate to the A2P SMS services provided to the Aggregators' largest customers, which could include other Aggregators/MSPs and/or enterprise customers. They may reflect bespoke pricing including bulk discounts or lower prices, to retain key business and volumes. As a result, the average A2P SMS prices shown here are likely to be lower than A2P SMS retail prices charged to most business sender customers, particularly SMEs that may need to pay standard list prices.

[70] Aggregators' [✂] responses to question 9 of the information request issued on 12 June 2024.
[71] [✂] response to question 9 of the information request issued on 12 June 2024.
[72] Ofcom received data from eight Aggregators. Due to consistency and comparability across the data, only six Aggregators were included in this chart [✂]. We note this chart does not show the most recent prices changes in 2024.

Table 3.2: Standard A2P SMS retail pricing for Aggregators

Aggregator	Service (if applicable)	Price in 2021 Q4, p/A2P SMS	Price in 2024 Q2, p/A2P SMS
Aggregator 1 – [✂]		1.70	2.63
Aggregator 2 – [✂][73]		2.82	3.99
Aggregator 3 – [✂][74]	[✂]	1.70	2.20
Aggregator 4 – [✂]	Service 1 – [✂][75]	3.00 - 4.00	3.50 - 5.00
Aggregator 5 – [✂][76]		2.97	3.67
Aggregator 6 – [✂][77]		1.68	2.14 (2024 Q1)
Aggregator 7 – [✂][78]	Service 1 – [✂]	3.30 - 5.00	3.80 - 5.70
	Service 2 – [✂]	2.20 - 2.90	2.80 - 3.80
	Service 3 – [✂]	2.70 - 3.60	3.40 - 4.60

3.67 Table 3.2 shows the standard pricing that several Aggregators/MSPs have offered their business sender customers in both Q4 2021 and Q2 2024. It shows the lowest standard price charged by any of these Aggregators/MSPs has increased from circa 1.68p to circa 2.14p, with standard prices generally increasing across all these Aggregators/MSPs.

3.68 One MSP [✂] said it increased its retail price per credit/fragment for low volume A2P SMS by 25% from 4p to 5p in March 2024.[79] This indicates that the increase in A2P SMS termination rates has been passed on to business sender customers in the form of higher prices.

[73] The data on prices was provided by [✂] in Euros and recalculated into British Pounds using quarterly exchange rates.
[74] [✂]
[75] Standard prices vary depending on volume commitment.
[76] The data on prices was provided by [✂] in Euro and recalculated into British Pounds using quarterly exchange rates.
[77] [✂] provided weighted average actual quarterly prices instead of standard prices.
[78] Standard prices vary depending on volume commitment.
[79] [✂] response to question 7a of the information request issued on 12 June 2024.

4. Market definition

4.1 In this section we set out our market definition in relation to the provision of wholesale A2P SMS termination.

4.2 In particular, we set out our assessment of possible retail substitutes (competitive constraints) such as WhatsApp for Business, RBM and in-app notifications. We then assess the wholesale market and whether any demand-side or supply-side substitutes exist, assess the existence of homogeneous competitive conditions and common pricing constraints.

4.3 We also assess whether there should be any distinct geographic markets and finally set out our provisional view as to what the relevant market should be.

4.4 In summary, we propose to identify 51 separate markets in the UK in relation to the wholesale A2P SMS termination services provided by each of the MCPs listed in Annex A5 to any third party (including Aggregators and other MCPs) for the termination of A2P SMS to the mobile numbers allocated by Ofcom to them (excluding any ported-out number) and to any ported-in mobile number, in the area that they serve.

Market Definition assessment

Regulatory and analytical framework

4.5 The regulatory and analytical framework relevant to the market review process is outlined in Annex A6.

4.6 The Act provides that, before making a market power determination,[80] we must identify "the markets which in [our] opinion are the ones which in the circumstances of the United Kingdom are the markets in relation to which it is appropriate to consider whether to make the determination"[81] and analyse those markets.

4.7 Therefore, the identification and definition of the relevant markets (the "**market definition stage**") is the first step in the market review process. In essence, this step seeks to identify the closest substitutes to the product (or group of products) that is the focus of our analysis (i.e. wholesale A2P SMS on-net termination) to identify the competitive constraints on MCPs' price-setting behaviour in relation to their A2P SMS termination rates. In Section 5, we assess the strength of any such competitive constraints to determine whether MCPs have significant market power ('SMP') in the relevant markets.

4.8 Below, we highlight some key points of our approach to market definition, which is discussed in more detail in Annex A6.

The hypothetical monopolist test

4.9 The framework that is typically employed in market definition, which is known as the hypothetical monopolist test, seeks to establish the narrowest relevant identifiable set of products[82] (and geographic areas) such that a hypothetical monopolist controlling that

[80] The market power determination concept is used in the Act to refer to a determination that a person has SMP in an identified services market.
[81] Section 79(1) of the Act.
[82] Products or services.

product group (in that area) could profitably sustain a small but significant non-transitory increase in price ("**SSNIP**")[83] above the competitive price level. A product is considered to constitute a separate market if the hypothetical monopolist supplier could impose a SSNIP above the competitive level without losing sales to such a degree as to make this price rise unprofitable.

4.10 Rather than being precisely applied, which is often challenging in practice due to data limitations, the hypothetical monopolist test serves as a conceptual framework to identify competitive constraints that could arise from demand-side substitution (i.e., customers switching to other products in response to a SSNIP) or supply-side substitution (i.e., suppliers of other products being able to supply the product(s) in question at a short notice and without incurring substantial costs in response to a SSNIP). Therefore, market definition often comes down to balancing various types of qualitative as well as quantitative evidence and exercising judgement.

4.11 As set out below, our analysis draws on:

- qualitative evidence on the availability and appropriateness of potential retail demand substitutes, based on internal documents and further information collected from MCPs and Aggregators, as well as our business sender and message recipient research; and
- evidence on volume changes in response to price increases, based on volume and price data collected from MCPs and Aggregators.

Forward look

4.12 The analysis must be forward-looking. Therefore, in line with section 79(1A) of the Act, we have conducted our assessment of the market(s) taking into account expected or foreseeable developments that may affect competition in the market. Specifically, we have based our analysis on expectations over a three-year period starting in January 2026, taking account of anticipated longer-term developments of relevance to the provision of A2P SMS termination and the business messaging market more generally.

The "focal product" and approach to market definition

4.13 Market definition is a means to an end – we seek to address any competition concerns that may arise from the exercise of market power in the relevant market by means of imposing remedies, and market definition is an exercise intended to support this objective.

4.14 As discussed in Section 3, we have observed that A2P SMS on-net termination rates have increased materially in recent years. Moreover, Aggregators have communicated their concerns in relation to these increases[84] as A2P SMS on-net termination is the most common wholesale product purchased by Aggregators to deliver retail services to business senders (i.e., the provision of A2P SMS messaging services). Therefore, we have assessed where SMP might arise by focusing on A2P SMS on-net termination as our "focal product",

[83] In practical terms, the SSNIP is usually considered to be a 5%-10% increase in price above the competitive level.

[84] We met with three Aggregators in May 2023 to discuss rising prices in the A2P SMS wholesale market and the impact of this on the retail market. We continued our engagement with the sector in 2024 with our evidence gathering activities.

and then seeking to identify the closest alternatives that could act as competitive constraints on A2P SMS on-net termination rates set by MCPs.[85]

4.15 Wholesale demand for A2P SMS termination is derived from purchasers of A2P SMS messaging services, i.e. business or public organisation senders who want to send bulk A2P SMS to their own customers or to citizens.

4.16 The range of available substitutes at the downstream (retail) level will therefore inform the constraints at the upstream (wholesale) level. This is because an increase in the price of a wholesale service, which may largely be passed through to the price of the downstream retail services, could lead retail customers to switch to substitute retail products, reducing demand for the wholesale input and potentially rendering the increase in the wholesale rate unprofitable. We refer to this as an indirect constraint. Such indirect constraints might lead to products being included in the same relevant market, even if those products do not constrain each other directly at the wholesale level.

4.17 For this reason, while we ultimately seek to define the relevant wholesale market, we begin with the consideration of the relevant retail services. On this basis, the starting point of our approach is to identify potential alternatives to A2P SMS messaging services (to which A2P SMS termination is an essential input) that business senders could turn to in response to a 5%-10% increase in the wholesale A2P SMS termination rate.[86]

4.18 Based on the above, in the rest of this section we approach market definition as follows:

a) We assess whether there are any demand-side substitutes at the retail level that could act as a constraint on wholesale A2P SMS termination rates.
b) We then assess the wholesale product market and, in particular, whether there are any wholesale demand or supply-side substitutes.
c) Finally, we turn to the geographic dimension of market definition and consider whether there are homogeneous competitive conditions and common pricing constraints across the UK, as well as whether there is a need to define specific geographic markets.

Retail substitutes (indirect constraints)

4.19 In assessing the strength and relevance of these constraints, we have considered the evidence we have gathered from the requests for information that we listed in Section 2.

A2P SMS is by far the preferred business messaging service for business senders and message recipients

4.20 As we discussed in Section 3, A2P SMS is part of a wider ecosystem of business messaging services including:

[85] As specified below, we have provisionally excluded A2P SMS termination services provided by the MCPs operating in the Channel Islands and the Isle of Man on the basis that they do not offer these services in the UK. For the avoidance of doubt, we have included in our focal products A2P SMS sent to UK mobile numbers we have allocated to any other MCPs based outside the UK.
[86] Even if passed through in its entirety, a 5%-10% increase in the wholesale A2P SMS termination price will translate into a smaller (potentially significantly smaller) increase in the retail price as the latter is typically higher.

- OCS business messaging services and, in particular, WhatsApp for Business, which appears to currently be the largest OCS business messaging service in the UK;87
- RBM services;
- in-app notifications and email.

4.21 Below, we discuss the evidence we have reviewed on the usage and perception of each of the business messaging services listed above. In summary, the evidence suggests that business senders and message recipients alike strongly prefer A2P SMS over other business messaging services, which are often seen as having drawbacks (e.g., limited reach, lower levels of acceptability etc). Moreover, the evidence suggests that retail demand for A2P SMS is unlikely to switch away from SMS in response to small price increases during the review period. Although the volumes of some of the other business services have been growing from a low base in recent years (see Section 3), this does not appear to have happened at the expense of A2P SMS volumes, nor does it seem to have been motivated by A2P SMS pricing. To the extent that there has been any switching away from A2P SMS, it has not happened to an extent that has rendered termination price increases unprofitable.

A2P SMS

4.22 The business sender research we commissioned[88] found that, for businesses and public organisations, A2P SMS is the preferred channel used for sending bulk messages.

4.23 Business senders valued A2P SMS for its unparalleled reach as it can be sent to anyone with a UK mobile number, regardless of their choice of mobile device or mobile operator (i.e., including to those without a smartphone or a data connection).[89] The ubiquity of SMS was particularly important to organisations that want to be able to message most adults in the UK population, such as public sector providers of healthcare services.[90] Moreover, SMS is the default messaging application on all mobile devices and, unlike WhatsApp and in-app notifications, it does not require the user to download a dedicated application or multiple applications to their device in order to be able to receive business messages.

4.24 Other A2P SMS characteristics valued by business senders are its familiarity and reliability as it is a well-established service. Our research also found that business senders value the cost-effectiveness of A2P SMS, for example in reducing missed appointments.

4.25 Furthermore, most business senders interviewed expect that they will continue to use A2P SMS for the foreseeable future.

4.26 Importantly, even when business senders use other channels for sending bulk messages, our research found they usually do so for specific, niche use cases and do so alongside continued

[87] Other OCS messaging services include Telegram Business, Viber for Business, Meta's Facebook Messenger for Business, Instagram Direct Messaging for Business etc. Their user base in the UK is, however, limited by comparison to WhatsApp for Business.
[88] Between 3-29 July 2024, Context Consulting conducted one-hour depth interviews with representatives from 30 public and private sector organisations that send A2P messages. See A2P Business sender research: qualitative report for more information.
[89] Around 96% of the adult population have a mobile phone and around 90% of the adult population have a smartphone. This data was extracted from the latest BARB Establishment survey (Q2 2024) using ONS population estimates data (June 2023).
[90] See A2P Business sender research: qualitative report for more information.

use of A2P SMS, instead of switching completely away from A2P SMS.[91] Hence, other channels are perceived as providing complementary services alongside A2P SMS (e.g., to adopt a multi-channel communication approach, or to reach out to niche and/or more tech savvy recipients who value additional functionalities). In other words, other channels act as complements, rather than as substitutes of A2P SMS, and their usage is not motivated by price increases in A2P SMS.

4.27 Moreover, the message recipient research we commissioned[92] found the majority of UK adults were aware of SMS (95%) and had received an A2P SMS message. More specifically, of those UK adults who were aware of SMS, 70% said they had received at least one A2P SMS message in the last month. When asked about which sectors they had received A2P messages from, respondents who had received at least one A2P SMS message in the last month were most likely to have received messages from NHS/healthcare (65%), delivery services (49%) and/or banking/financial services (41%).[93]

4.28 The recipient research also found that SMS was perceived as a more appropriate means to receive certain types of communications than other A2P messaging services among message recipients. Specifically:

a) 66% of those who personally use a smartphone agreed that they would prefer to receive messages containing personal or sensitive information by SMS, as opposed to other communications services. Just over half (55%) agreed that they were happy to receive A2P SMS messages but not via any other communications service, and a similar proportion of smartphone users (52%) agreed that they were more likely to miss A2P messages from communications services other than SMS; and,
b) for those who personally use a smartphone, our research found that consumers believed it was more acceptable to receive confirmation, information or security/passcode messages via SMS, compared to other A2P messaging services. For example, over 3 in 5 said it was acceptable to receive confirmation and/or security messages via SMS compared to between 9% and 15% saying it is acceptable to receive the same types of messages via WhatsApp. However, the acceptance was lower for receiving promotional SMS messages, where 20% believed it was acceptable to receive this type of SMS from a private organisation and 32% from a public organisation.

4.29 Therefore, from our research, A2P SMS is seen as a highly valued service by both business senders and message recipients alike. In addition, the findings that business senders and public organisations consider A2P SMS to be a cost-effective means of communication, plus that they have not limited their usage despite recent price increases and also expect to continue using A2P SMS for the foreseeable future, suggests that business senders' willingness to substitute to alternative services in response to a SSNIP is limited.

WhatsApp for Business

4.30 As discussed in Section 3, WhatsApp for Business is another channel business senders might use to send messages in near real time to their customers' mobile phones given WhatsApp's

[91] Just over half of the 30 business senders we interviewed stated their organisations were also using other messaging channels in addition to A2P SMS. We also note that one organisation in our sample had completely switched away from SMS to other channels.
[92] Between 11-13 October 2024, Yonder Consulting conducted an online omnibus survey of 2,086 UK adults (18+). See A2P Message Recipient quantitative research for more information.
[93] See A2P Message Recipient quantitative research for more information.

wide reach to most online UK adults.[94] However, unlike SMS, WhatsApp is only available to smartphone users who have downloaded the application to their devices. In addition, WhatsApp messages can only be delivered to a particular device if there is a data or WiFi connection.

4.31 Some business senders acknowledge that other channels, such as WhatsApp for Business, may have some advantages over A2P SMS in certain circumstances. For example, WhatsApp for Business can provide greater functionality and customisation of messages (e.g., accommodating longer texts, enabling the inclusion of images, easily allowing for two-way messaging) that may be desirable for some use cases (e.g., marketing or promotional purposes). It also advertises additional security features such as end-to-end encryption.

4.32 Based on our research, some business senders use other channels, notably WhatsApp for Business, in addition to SMS, to cater to the requirements of specific audiences or use cases, or to overcome limitations of A2P SMS (e.g., the 160 character limit, not being able to include pictures, etc).

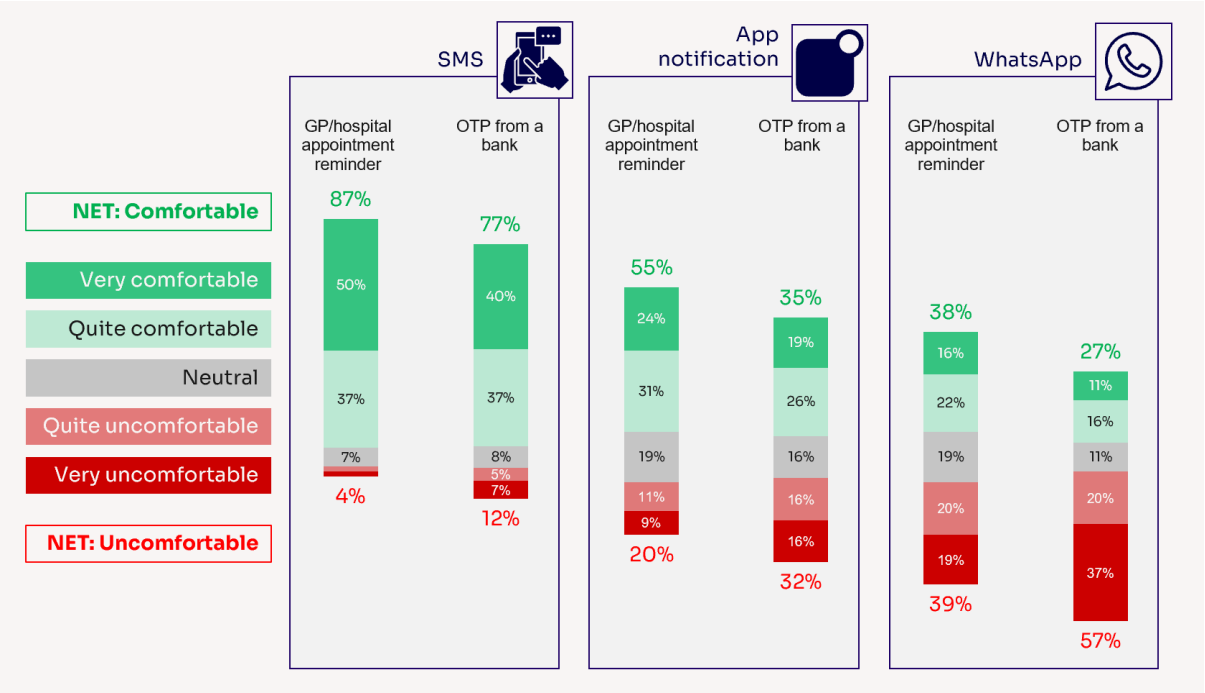
4.33 Despite these possible advantages, our research found that business senders were hesitant to use other messaging services, including WhatsApp for Business. One of the main reasons cited is that other business messaging channels, in particular WhatsApp for Business and other OCS channels, tend to be perceived as too informal for some business/public organisations.[95]

4.34 This is also consistent with our message recipient research, which found that although awareness of WhatsApp (94%) is comparable to that of SMS (95%), 17% of participants who were aware of WhatsApp said they had received an A2P message via this channel in the last month.[96]

4.35 The message recipient research also found lower levels of comfort with receiving certain types of A2P messages[97] via WhatsApp compared to A2P SMS (see Figure 4.1 below). For example, just under four-in-ten (39%) of those aware of WhatsApp said they would not be comfortable receiving a GP/hospital appointment reminder from that service, compared to 4% not being comfortable to receive the same message via SMS.

[94] WhatsApp reached 87% of UK online adults in May 2024. Online Nation, Figure 33, UK online adult reach of ten highest-reaching online messaging/call services and average time spent: May 2024.
[95] See A2P Business sender research: qualitative report for more information.
[96] Those stating they had received a WhatsApp business message tended to be younger, urban and more likely to have a higher household income.
[97] Participants were asked how comfortable or uncomfortable they would be receiving the following types of A2P messages from a business/organisation: 'order update from a retailer', 'GP hospital appointment reminder', 'One Time Passcode from a bank', 'social media password reset link' and 'tax code change notification from HMRC'.

Figure 4.1: Levels of comfort/discomfort when receiving specific A2P messages via SMS/App notification/WhatsApp



Source: A2P Message Recipient quantitative research

4.36 Moreover, the types of A2P messages received via WhatsApp were different compared to A2P SMS as set out above. Those receiving A2P WhatsApp messages said they were most likely to receive messages from personal or professional service businesses such as estate agents, hair/beauty salons, electricians and plumbers (25%), which compares to 16% for A2P SMS and 28% for email.[98]

4.37 Meanwhile, Meta (the owner of WhatsApp) has indicated that [✂].[99]

4.38 At present, the pricing of WhatsApp for Business conversations is within the range of A2P SMS and, in some cases, below (e.g. utility messages). Standard retail A2P SMS prices as of Q2 2024 were between circa 2.1p to 5.7p per message, depending on the Aggregator, type of A2P product and volume, as shown in Table 3.2 in Section 3. This compares to prices of between 1.59p and 3.82p for WhatsApp for Business, as shown in Table 3.1 in Section 3.[100]

4.39 Notwithstanding WhatsApp for Business pricing being within a similar range to that of A2P SMS, and despite recent increases in the pricing of retail A2P SMS messaging services, as a result of increases in termination prices, which have been well above the SSNIP level (around 25%), there seems to have been limited appetite from business senders to switch in response. Taking account of the evidence from the business sender and the message recipient research we consider that this is unlikely to change in the foreseeable future.

[98] See A2P Message Recipient quantitative research for more information.
[99] Meta response to question 15 of the information request issued on 31 July 2024.
[100] New pricing for WhatsApp for Business Utility messages came into force on 1 August 2024, with a significant reduction in the pricing of these messages of 44.7%. See Pricing - WhatsApp Business Platform. We expect to monitor and take into account any effects of this change in pricing by the time we publish our statement.

RBM

4.40 As discussed in Section 3, RBM provides similar functionality to SMS, as well as incorporating some additional features (e.g. customisation, images, etc.). As RBM is being rolled out in the UK as a carrier service (i.e. a service managed by the relevant MCP), mobile phone users do not need to download a separate application in order to receive RBM messages. RBM messages can instead be delivered to the default Messages application on their phones, in the same way that A2P SMS messages are currently delivered. However, as it is a data-based service, RBM will likely only be delivered to an RCS-capable smartphone as long as there is mobile data or WiFi connectivity available.[101]

4.41 RBM has until recently only been available in the UK to users of Android mobile devices,[102] though we understand that it was enabled on iOS devices by three MNOs in the UK during 2024.[103] This suggests that RBM may now be available by default to comparable numbers of smartphones as those that can be reached by A2P SMS.[104] While RBM may still not be available to non-smartphone users, these represent a small fraction of the UK population.[105]

4.42 Our research suggests that RCS/RBM is not currently seen as substitute for A2P SMS. Few of the participants in our business sender research said they were using it as a communications service,[106] and it was not mentioned by any of the other business senders as being considered for future use. Our message recipient research showed that just under a quarter (23%) of those who personally use a smartphone were aware of this communication service and only 3% stated they received an A2P message via RCS in the last month.

4.43 It is unclear to what extent MSPs, Aggregators and MCPs will begin to actively promote RBM as a substitute for A2P SMS over the next few years. The pace at which business senders will start adopting RBM or of customers becoming aware and comfortable with receiving RBM messages is also unclear. As noted in Section 3, the volumes of RBM messages are currently very low.

4.44 The evidence we have reviewed therefore suggests that the value senders place on A2P SMS, along with the limited awareness and usage of RBM, means that a SSNIP on A2P SMS is unlikely to prompt significant volumes to switch to RBM. Indeed, the awareness and perceptions of business senders regarding RBM do not appear to have been influenced by the recent retail price increases in A2P SMS messaging and there is no evidence that this will

[101] RBM may provide the ability to fallback to SMS, but this is likely to only be the case for purely text-based messages.
[102] Ofcom 16 July 2024. Technology Tracker 2024 Data Tables (Table 47): 47% of respondents with a smartphone had an Android operating system (vs 52% Apple).
[103] BT/EE were the first UK MCP to enable the service, we understand that Three and VMO2 launched in December 2024. Vodafone are expected to follow.
[104] There are still some unknowns in relation to RCS (and RBM) interoperability with iOS devices. For example, it remains unclear whether older iOS devices, which do not support the most recent version (i.e., iOS 18), will have RBM enabled.
[105] The Ofcom Technology Tracker 2024 showed that 98% of participants had a mobile phone in their household, of which 96% were a smartphone. This was an increase from 2023, which showed that 97% of participants had a mobile phone in their household, of which 94% were a smartphone.
[106] 2 out of 30 business senders interviewed said they were currently using RCS/RBM. See A2P Business sender research: qualitative report for more information.

change in the near future.[107] We therefore do not believe that RBM is a substitute for A2P SMS at present, nor is it likely to become one during the market review period.

4.45 Moreover, although we have not reached a view on whether our assessment of SMP would be different were RBM included in the relevant market, the fact that the pricing of termination of RBM messages is determined by the MCPs suggests that RBM messages would not act as an independent competitive constraint, which would undermine any finding of SMP in relation to A2P SMS.[108]

In-app notifications and email

4.46 Business senders also make use of other ways to communicate with their customers, such as in-app notifications and email.

4.47 In-app notifications can sometimes be seen as offering additional security features compared to SMS or OCS and these features have apparently been a motivation for some business messaging senders to use in-app notifications, rather than solely for cost-related reasons. For example, some apps (NHS, banking) require the user to securely identify themselves in order to access any notifications, which has been cited as a reason to move to in-app notifications.[109]

4.48 In addition, the findings of our message recipient research suggest that awareness and acceptance levels for in-app communications are relatively high among A2P message recipients. More specifically, 70% of those who personally use a smartphone were aware of in-app notifications and just under one-in-three said they had a received a message through that channel in the last month. When asked how comfortable they would be receiving different types of A2P messages through this channel, respondents were more likely to feel comfortable than uncomfortable for several types of messages, including hospital reminders and One Time Passcode (OTP) messages from a bank.[110]

4.49 However, using in-app notifications as a messaging service for sending bulk messages generally has limitations. In order to use in-app notifications as a substitute for A2P SMS, each business sender would need to develop its own application (for Android and iOS devices) and to persuade its customers/users to download it on their smartphones to be able to reach them. Moreover, the user would need to enable the application to send push notifications in order for the application to achieve the same visibility as SMS messages. Given the potentially material costs involved, we consider that many businesses and organisations (such as SMEs) would be unlikely to switch to in-app notifications in response to a 5%-10% increase in the prices of A2P SMS.

4.50 In addition, the decision of business senders to develop and roll out their own applications primarily reflects broader business/organizational considerations (e.g. integration of wider

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[107] It is worth noting that, at present, some versions of RBM messaging services are priced at a higher level than A2P SMS. For example, [✂] response to question 7 of the information request issued on 12 June 2024.
[108] In responses to questions 13-15 of the information requests on 23 May 2024, the four large MNOs informed us of the prices they charged Aggregators for the termination of RBM messages and [✂].
[109] For example, this NHS England press release, published on 7 May 2024, notes that switching to notifications through the NHS app *"(...) avoids the cost of sending a text message, is more secure, and puts all patient NHS messages in one place."*
[110] The highest level of comfort was to receive messages about 'order updates from a retailer' (62%) and 'GP/hospital appointment reminders' (55%). Around one-in-three of those aware of app notifications said they would not be comfortable receiving 'OTP messages from a bank', 'social media password reset links' or a 'tax code change notification from HMRC'. See A2P Message Recipient quantitative research for more information.

functionality through the app, security requirements, etc.). The cost of A2P SMS is not the main factor driving this change.

4.51 Furthermore, we understand that some business senders and public organisations that have successfully developed and rolled out their own applications, in particular the NHS and banks, continue to make significant use of A2P SMS.[111] The reasons for this may include prioritising the use of SMS for some more time-sensitive and/or important messages such as appointment reminders, where the sender wants to ensure that the message will reach those customers/citizens that are not using the app, do not have notifications enabled or have no access to mobile data.

4.52 Even where in-app notifications are seen as the preferred option, A2P SMS may still be used as a fallback mechanism (e.g. providing an OTP when access to the app is unavailable). We are not currently aware of any concrete plans by any major senders of business messages to fully discontinue their use of A2P SMS messaging services and, in fact, despite having rolled out and promoted their own applications, many of these users are still large purchasers of A2P SMS.[112]

4.53 Therefore, for the reasons stated above, we consider that in-app notifications are not a substitute to A2P SMS and, as a result, do not act as an effective constraint. In addition, there is no evidence that the growth of in-app notifications has constrained the growth of A2P volumes, which has continued strongly despite termination price increases, nor that any switching to in-app notifications has been substantially motivated by A2P SMS pricing.

4.54 With regard to the use of emails for business messaging, our research found that business senders generally held the perception that A2P SMS were read sooner after receipt and had higher read rates compared to email.[113] This was also corroborated by our message recipient research, where 65% of respondents who personally use a smartphone agreed that they checked SMS messages as soon as they arrived. Around half (52%) of smartphone users agreed that they were more likely to miss messages via other communications services compared to SMS and just over four-in-ten (42%) agreed that they didn't always read messages sent via other communications services.

4.55 Meanwhile, respondents saw email as similar to A2P SMS in terms of acceptability as a means of receiving messages from businesses. For example, awareness of email among those who personally use a smartphone was 94%, while between 52% and 68% believed it was acceptable to receive confirmation, information, promotional and security/passcode

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[111] The NHS App had 36 million registered users in January 2025. NHS England, 6 January 2025, Reforming elective care for patients - January 2025. Page 30.

[112] In its tender for services in September 2024 (see https://www.contractsfinder.service.gov.uk/notice/c9afefb6-26b6-4102-b081-e226304b837f?origin=SearchResults&p=1), Notify (a digital communications platform, developed and run by the Government Digital Service) states that it *"(…) sends an average of 3 million SMS fragments a day, regularly achieving peaks of 7 million. Current forecasting work indicates that Notify will send 3.8 billion SMS fragments during FY 25/26 and 3.9 billion SMS fragments during FY 26/27, as Notify continues to work closely with the NHS, however this figure may vary significantly due to changes in demand."* In addition, the information we collected from Aggregators found that banks and public organisations, still procure significant amounts of A2P SMS services. For example, [✂] sold almost [✂] A2P SMS to Government and the NHS in FY 23/24. Data from [✂] showed individual banks were among their top 20 customers.

[113] Business senders have the same perception of higher/quicker read rates in relation to in-app notifications.

emails,[114] which is comparable to the levels of acceptability for receiving confirmation and security/passcode messages via SMS.

4.56 Just under four-in-five of those aware of email said they had received at least one A2P message in the last month. The message recipient research suggests that emails from business senders are received with a higher frequency than A2P SMS - or are at least perceived to be more frequent - with 62% of respondents who had received an email from business senders in the last month saying they received them on a daily basis, compared to 17% for A2P SMS.

4.57 We do not consider it surprising that the message recipient research found email to be widely used by business senders, as it is a familiar form of communication that is relatively cheap to send. However, it is unlikely that email is a substitute for A2P SMS for many of the types of business messages that are currently sent via A2P SMS, e.g. time-sensitive appointment reminders or passcodes. Furthermore, email has been available as another form of communications service to business senders for many years, but it does not appear to have curtailed the growth of A2P SMS in recent years, even in spite of recent price increases which were significantly above the SSNIP level.

Switching to other services will likely incur cost and require effort

4.58 We consider that incorporating additional communications channels generally requires business senders to undertake changes or updates to their existing systems and procedures.

4.59 In some circumstances, and for some types of messages, business senders may need to seek consent from message recipients to contact them via different routes other than SMS messages,[115] as well as take steps to ensure that their processes are in line with platform-specific policies. In the case of WhatsApp for Business, the platform's best practice policy requires the sender to obtain opt-in consent from the message recipient for the different types of messages they will receive.[116]

4.60 Aggregators/MSPs sometimes also require the business sender to obtain opt-in consent from recipients if they incorporate additional channels alongside A2P SMS services. For example, we note that Twilio's UK guidance for A2P messaging includes good practice related to getting opt-in consent from end users.[117]

4.61 While we do not have quantitative evidence on the scale of associated costs/effort required for business senders to obtain consent or undertake other changes required in order to switch to other business messaging channels, to the extent that these are material, they may act as a barrier to switching in response to a 5-10% increase in SMS prices.

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[114] Where participants were aware of the communications service in question, they were asked whether they would find it acceptable to receive the following types of messages from a commercial or public service organisation: confirmation, information, promotional and security/passcode. See A2P Message Recipient quantitative research for more information.

[115] See, for example, guidance issued by the Information Commissioner's Office entitled "An introduction to direct marketing – a step-by-step guide for your small business" which specifies that "*If you want to send marketing emails or texts, you must either have consent, or meet all the requirements of what's known as the "soft opt-in"*" (see guidance set out under "Step Two: Plan", "How are you planning to contact people?"). Accessed on 10 December 2024.

[116] See WhatsApp Business Policy. Accessed 10 December 2024.

[117] See the Compliance considerations in the Twilio UK guidance. Accessed 21 January 2025.

4.62 As discussed above, the research we commissioned did not find evidence of business senders having switched, or that they are considering switching, significant volumes away from SMS in response to price increases.

Demand for A2P SMS messaging services is relatively inelastic

4.63 Demand for A2P SMS messaging services has continued to grow despite significant price increases at the retail level,[118] suggesting that it is relatively inelastic.[119]

4.64 Many of the organisations interviewed in the business sender research viewed A2P SMS as a cost-effective channel of communication offering a good return on investment. Organisations as diverse as NHS providers, estate agents and restaurants cited the advantages of A2P SMS in reminding people about their appointments, making the cost of a message relatively small compared to the costs of missed appointments. For example, an operations manager for a restaurant chain said that the cost of these messages was not a concern, even if it goes up, as it is worth it to reduce no-shows which typically cost £60 for a table for two.[120]

4.65 In addition, some business senders buy bundled services (e.g. through a platform to support SMEs in running a specific type of business, such as hair salons) that include an A2P SMS messaging service as part of a booking or reservation system.[121] These users are less likely to have direct visibility of the price of the A2P SMS messaging element in the bundle and will therefore be less sensitive to it and any potential fluctuations.

4.66 Given the value of A2P SMS services, and taking account of their preference for using A2P SMS primarily over other available channels, most business senders would be unlikely to switch significant volumes away from A2P SMS as a result of small price increases. Our qualitative business sender research found that, when pressed on this point, some of the businesses interviewed indicated it would take substantial increases in retail prices (such as an increase of between 30% and 50%), well above the SSNIP threshold of a 5%-10% wholesale price increase, for them to re-evaluate their demand volumes and consider other channels.

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[118] Based on the data we collected from six Aggregators and their average pricing for their top 20 customers, average price increases for their A2P SMS messaging services between 2020/21 and 2023/24 were circa 25%, while volumes increased by circa 60%. As these prices relate to Aggregators' largest customers, which could include other Aggregators/MSPs and/or enterprise customers, the prices referenced may not be reflective of A2P SMS headline retail prices. Furthermore, the largest business customers may receive bespoke pricing at the retail level, including bulk discounts or lower prices, to retain key business and volumes. See Figure 3.8. Aggregators/MSPs have also increased their standard retail prices in recent years (see Table 3.2).

[119] When considering prevailing elasticities there is a possible risk that, if prices had been set below the competitive level, price elasticity would be lower compared to the competitive level. As a result, a 5%-10% price increase would be unlikely to trigger sufficient volumes to switch away from the product/service in question, leading us to erroneously define the relevant market too narrowly. This is known as the "reverse cellophane fallacy". However, in this case, we do not consider this to be a plausible risk for the following reasons: (i) we have not seen any evidence that prices are below cost (which may represent the competitive level); (ii) before the price increases which began in 2021, A2P SMS on-net termination rates had been stable for some time, suggesting that they were not below cost; (iii) we have not seen evidence of substitution away from A2P SMS due to higher prices as a result of increases by some MCPs; and (iv) the qualitative evidence we have reviewed indicates that there are many reasons why business senders would be unlikely to switch their demand away from A2P SMS in response to a small change in relative pricing.

[120] See A2P Business sender research: qualitative report for more information.

[121] The platforms mentioned by business senders included Treatwell, Fresher, Sevenrooms and ResDiary. See A2P Business sender research: qualitative report for more information.

4.67 This is further substantiated by evidence from the internal documents that we collected from the four large MNOs, that provide context for their SMS termination pricing decisions. Price increases have been implemented despite MNOs sometimes acknowledging a risk that significant price increases in termination may accelerate the migration away from A2P SMS to other channels. Specifically:

a) [✂]
b) [✂][122]
c) [✂]
d) [✂]

Demand for other business messaging services is growing but from a very small base

4.68 The current prevalence of A2P SMS services over other business messaging services is reflected in their respective volumes. While the volumes of WhatsApp for Business and RBM have grown steadily over the last two years, they represent a small fraction of the respective A2P SMS volumes. For 2023/24,[123] volumes of A2P SMS terminated by the four large MNOs were over 20 billion messages, compared with just over 100 million conversations for WhatsApp for Business and 18.7 million RBM messages over the same time period as shown in Figures 3.4 and 3.5.[124]

4.69 We have not collected data on the usage of in-app notifications. We understand, however, from our engagement with stakeholders and the market research that while some business senders (in particular banks and the NHS) are making increased use of their in-app notifications, they are still making significant use of A2P SMS, so their apps are not yet a substitute for A2P SMS.[125] For example, as part of our business sender research, a decision-maker in the NHS indicated that A2P SMS messages are primarily used for contacting patients, but that it also uses the NHS App and patient portals as a means of enhancing engagement and streamlining healthcare delivery.[126]

4.70 Therefore, while demand for other channels is growing steadily from a low base and might be expected to continue to grow further in the future, we consider that there is not enough momentum for these channels to develop into substitutes to A2P SMS and therefore act as a competitive constraint over the three-year market review period.

4.71 Based on the evidence presented above, we believe that substitution is unlikely to happen during our review period. However, as discussed in Section 5, we consider it is possible that other channels might act as a competitive retail market constraint beyond the review period.

Provisional conclusions on retail services

4.72 We propose to conclude that, for the review period running up to 31 December 2028, demand-side substitution at the retail level is unlikely to constrain the price of A2P SMS termination. This means that we do not see any substitutes as being sufficiently close

[122] [✂].
[123] We refer to the financial year i.e., 1 April 2023 to 31 March 2024.
[124] Volumes are not fully comparable as the relevant unit for WhatsApp for Business is conversations, which corresponds to all messages exchanged within a 24-hour window from the first message. However, even allowing for this, the volumes for A2P SMS are of a different order of magnitude.
[125] This was discussed in engagement calls with [✂]. In an engagement call with [✂].
[126] See A2P Business sender research: qualitative report for more information.

enough to A2P SMS in the eyes of business senders, such that they would act as an indirect constraint on an increase in the wholesale price of A2P SMS termination by 5-10%.

Wholesale product market

4.73 Constraints that arise from substitution at the wholesale level are referred to as direct constraints. There are two sources of constraints at the wholesale level, to which we may apply the SSNIP framework to identify the closest competitive constraints to A2P SMS on-net termination:

a) demand-side substitution at the wholesale level could constrain A2P SMS on-net termination rates if Aggregators are able to switch to an alternative termination service in response to a SSNIP on the A2P SMS on-net termination rate; and
b) supply-side substitution could be a relevant constraint if A2P SMS termination on a specific mobile number could be provided by different MCPs.

4.74 As outlined in paragraph 4.15, wholesale demand for A2P SMS on-net termination from Aggregators is a derived demand, based on demand for A2P SMS messaging services from the retail market. Therefore, if customers at the retail level do not find alternative ways of sending a message to be close demand-side substitutes to A2P SMS, then the same will be so for Aggregators at the wholesale level.

4.75 Therefore, Aggregators would not switch to, for example, WhatsApp for Business in response to a SSNIP on wholesale A2P SMS termination rates (e.g. offer their customers WhatsApp for Business instead of A2P SMS messaging) because their customers at the retail level would not switch in response to changes in relative retail prices due to a wholesale SSNIP.

4.76 This means that, at the wholesale level, what an Aggregator would be seeking as a substitute would be a product that allows it to facilitate the sending of A2P SMS specifically, and have them delivered to the right recipients, either because they can reach them through another wholesale provider (i.e. wholesale demand-side substitution) or because there is some wholesale alternative provider that can do direct termination on the recipients' phones (i.e. wholesale supply-side substitution). The existence of any such products could act as a constraint at the wholesale level.

Wholesale demand-side substitution

4.77 We have assessed whether there are any alternative termination services that an Aggregator could switch to when faced with an increase in A2P SMS on-net termination rates.

4.78 As outlined in Section 3, Aggregators can purchase A2P SMS termination services either directly from each terminating MCP (i.e. on-net) or indirectly, from another interconnecting MCP who effectively provides access to the terminating provider's interconnect channel (i.e., off-net). In the latter case, the interconnecting MCP forwards the A2P SMS traffic to the respective terminating MCP via the interconnect channel (alongside their P2P SMS traffic) and incurs the interconnect rate that the terminating MCP charges. As a result, the A2P SMS off-net termination rates offered by interconnecting MCPs are closely linked to the interconnect rates MCPs charge each other, with a margin which the interconnecting MCP usually adds on.

4.79 The evidence we have reviewed indicates that Aggregators are very sensitive to the price differential between on-net and off-net rates. Aggregators take advantage of temporary price discrepancies that may arise whenever a terminating MCP increases its on-net

termination rate and switch to the off-net routes while the price of the latter remains cheaper, i.e. they are using the least-cost routing. For example, from the information requests that we sent to Aggregators we received the following responses:

a) [✂]
b) [✂]

4.80 Moreover, MCPs' internal documents on pricing decisions reveal that MCPs are conscious of these cheaper routing opportunities for Aggregators and the risk of A2P SMS termination traffic being diverted to off-net routes, leading to a loss of revenue for them, as we explain further below. Hence, MCPs tend to make decisions regarding A2P SMS on-net termination rates taking into account their SMS termination rates on their interconnect routes and vice versa.

4.81 It should be noted that, as we explained in paragraph 3.29, we understand that the same SMS termination rates on interconnect routes apply to both A2P and P2P SMS, as MCPs currently do not distinguish their pricing between A2P and P2P flows on the interconnect route.[127] Therefore, decisions on the pricing of interconnect routes largely driven by A2P considerations have also impacted on P2P pricing.

4.82 Notwithstanding this, the evidence we have seen suggests the decisions made by the four large MNOs on the pricing of interconnect routes have effectively been driven by A2P considerations (rather than by the impact on P2P pricing). For example:

a) [✂]
b) [✂]
c) [✂]
d) [✂]

4.83 Using data on pricing we sourced from the four large MNOs[128] we analysed the relationship between (i) the prices that specific MNOs charge for A2P SMS on-net termination and (ii) the prices other interconnecting MNOs charge Aggregators for A2P SMS off-net termination traffic going to subscribers of that specific MNO. Figure 4.2 below illustrates this for the case of one specific MNO [✂] between 2019 and 2024.

4.84 We observe that the off-net prices to terminate traffic on [✂] network have typically been just above [✂] on-net rates. In addition, we note the trajectory of these off-net prices reflect the increased prices to terminate traffic on the interconnect route, in this case on [✂]. In other words, MCPs understand that by increasing prices on the interconnect route, they will drive up prices offered by other MCPs for A2P SMS off-net termination on their subscribers' devices.

Figure 4.2: [✂] A2P SMS on-net prices and other MNOs' A2P SMS off-net prices for traffic destined for [✂] network.

[✂] *Source: Ofcom analysis of MNOs' data.*

[127] In response to our request for information, and subsequent clarifications, the four large MNOs suggested that when terminating SMS traffic on the interconnect route, it was not possible to fully distinguish between P2P and A2P SMS volumes. EE explained that [✂]. When asked for a clarification regarding the volumes of P2P termination, Vodafone stated that [✂]. VMO2 stated [✂]. Three stated [✂].
[128] Four large MNOs' responses to question 3 of the information request issued on 23 May 2024.

4.85 Based on the evidence we have reviewed, and the application of the hypothetical monopolist framework, our provisional view is that A2P SMS termination via the interconnect route is a wholesale demand side substitute to A2P SMS on-net termination and hence poses a competitive constraint on A2P SMS on-net termination rates. On that basis, our initial view is that the relevant market includes A2P SMS on-net termination (i.e., our focal product) as well as A2P SMS termination via the interconnect channel.

4.86 It should be noted that, at present, the interconnect route is used for both P2P and A2P SMS termination, and some terminating MCPs have stated they are currently unable to fully distinguish between A2P and P2P flows, hence the A2P SMS termination services currently provided via the interconnect channel by MCPs also provide P2P termination services. We discuss this in more detail in Section 6.

Supply-side substitution at the wholesale level

4.87 A2P SMS termination is a monopoly in the sense that only the MCP to which the recipient is subscribed can enable the delivery of an SMS to that recipient (whether coming via on-net or off-net routes). We are not aware of any way in which another provider could terminate an A2P SMS on the phone of another MCP's subscriber.

4.88 Therefore, we consider that there are no supply side substitutes to A2P SMS on-net termination.

Ported numbers

4.89 Mobile number portability allows subscribers to take their mobile number with them when they change their provider of mobile services. We understand that where a number has been ported to a new MCP (the 'Recipient Provider'), Aggregators can send A2P SMS directly to that MCP (i.e. the current provider of mobile services to the message recipient).

4.90 In particular, one of the large MNOs [✂] told us that direct delivery of the A2P SMS from Aggregators to the Recipient Provider is "the more common occurrence" in respect of their network. They explained that Aggregators can check the identity of the Recipient Provider either directly (by means of a "Send Routing Information" signalling message)[129] or indirectly (through third parties). The same MNO added that the proportion of A2P SMS traffic to ported-out numbers which is delivered indirectly on an 'off-net route' via the MCP that was originally, or previously, providing mobile services to the relevant subscriber (the Donor Provider[130]) and is then onward-routed to the Recipient Provider is "very low".[131]

4.91 In light of the above, we would expect most A2P SMS traffic to ported numbers to be terminated directly by the Recipient Provider, which is therefore able to set and charge its own A2P SMS on-net termination rate to Aggregators. We would welcome further input from stakeholders on the extent to which A2P SMS traffic is terminated directly by Recipient Providers.

4.92 Therefore, our initial view is that each relevant market includes the wholesale A2P SMS termination provided by each terminating MCP for the termination of A2P SMS to the

[129] Our understanding is that this option is available if the Aggregator has mobile network signalling capability.
[130] The Donor Provider can be the MCP which originally provided mobile services to the relevant subscriber (i.e., the Number Range Holder) or, where the number has been ported multiple times, one of the other MCPs to whom the subscriber has switched before switching to their current provider (i.e., the Recipient Provider).
[131] [✂] response to question 8 of the information request issued on 23 May 2024 and as clarified on 7 January 2025.

mobile numbers which have been ported to the terminating MCP through number portability (i.e. any 'ported-in' numbers), in addition to the mobile numbers allocated by Ofcom to that terminating MCP (excluding, any 'ported-out' numbers for the reasons explained below).

4.93 Where an Aggregator sends an A2P SMS to the Donor Provider (instead of the Recipient Provider) - either intentionally or erroneously - we note that the Donor Provider will be involved in the provision of A2P SMS off-net termination. However, as explained at paragraph 6.47, where the A2P SMS traffic 'transits' through one or more interconnecting MCPs before reaching the terminating MCP, we consider that only the "last leg" of this off-net termination route is within our relevant A2P SMS termination market and this "last leg" will be provided by the Recipient Provider. To clarify that any 'transit' occurring before this "last leg" would fall outside the relevant market, we propose to expressly exclude any 'ported-out' mobile number, and to specify that where the relevant subscriber is currently back with the Number Range Holder, their 'ported-back' number would not be excluded.

4.94 For the avoidance of doubt, where an Aggregator sends an A2P SMS directly to a Recipient Provider which is not the Number Range Holder in respect of that specific number, the A2P SMS on-net termination service provided by that Recipient Provider would fall within our proposed market definition as termination provided in relation to one of its ported-in numbers. In this case, the Number Range Holder would not be involved in the provision of A2P SMS termination, which is in line with the proposed exclusion of ported-out numbers.

Homogeneous competitive conditions and common pricing constraints

4.95 The analysis of demand and supply-side substitution presented above would imply a separate product market for A2P SMS termination (on-net and off-net via the interconnect route) for each individual mobile number. However, in line with the approach that we have consistently taken in relation to mobile call termination,[132] we consider it reasonable to widen the individual product market by aggregating individual product markets if at least one of two conditions is satisfied:

a) the individual markets face sufficiently homogeneous competitive conditions, meaning that suppliers' conduct would be the same in each; and/or
b) there is a common pricing constraint, which means that suppliers' pricing and behaviour is likely to be the same in each market being considered.

4.96 Recipients of A2P SMS lack the incentive to influence the cost of termination, as they do not bear the cost of the message being terminated and lack the ability to influence termination rates. These features are common across all the mobile numbers controlled by a given MCP as a Number Range Holder (i.e. the numbers falling within any mobile number range allocated by Ofcom to that MCP except for ported-out numbers) or as a Recipient Provider (in relation to ported-in numbers) – indicating sufficient homogeneity of competitive conditions. In addition, on current arrangements, there is a common pricing constraint at the wholesale level, as it is likely to be costly and complex for a Number Range Holder to

[132] See, for example: (i) Ofcom 30 March 2021 Wholesale Voice Markets Review 2021-26 Statement paragraphs 5.19-5.21; (ii) Ofcom 28 March 2018 Mobile Call Termination Market Review 2018-2021 Final Statement paragraphs 3.70-3.73; and (iii) Ofcom 17 March 2015 Mobile call termination market review 2015-18 Statement paragraphs 3.90-3.94.

charge different termination rates for messages sent to individual mobile numbers on its network.

4.97 However, we do not consider that competitive conditions or pricing constraints are common across different Number Range Holders. As the evidence shows, different terminating MCPs set different A2P SMS on-net termination rates and different termination rates on the interconnect route.

4.98 Therefore, we propose aggregating A2P SMS on-net termination and termination on the interconnect route to individual mobile numbers into a wider product market encompassing these products to all mobile numbers controlled by a Number Range Holder (excluding ported-out numbers and including ported-in numbers), but no further.

4.99 In summary, we consider that the relevant product market includes wholesale termination of A2P SMS through both the direct on-net route for termination and termination through the interconnect route provided to other MCPs. Furthermore, each relevant market includes all mobile numbers allocated to a specific Number Range Holder (excluding those ported-out) and all its ported-in mobile numbers. Therefore, there is one relevant market per MCP and it includes all the mobile numbers within its number allocation (except for ported-out numbers) and all its ported-in numbers.

4.100 We now turn our attention to the geographic dimension of market definition.

Geographic market definition

4.101 There are two dimensions to the definition of a relevant market: the relevant products to be included in the same market (which we have discussed above) and the geographic extent of the market. In relation to defining the relevant geographic markets, this comprises an area in which the undertakings concerned are involved in the supply and demand of the relevant products or services, in which the conditions of competition are sufficiently homogeneous, and which can be distinguished from neighbouring areas in which the prevailing conditions of competition are significantly different. Areas in which the conditions of competition are heterogeneous do not constitute a uniform market.

4.102 We consider that the geographic extent of each market for A2P SMS termination is the area served by the relevant terminating MCP.[133] The competitive conditions a terminating MCP faces in providing A2P SMS termination services are the same across the geographic area in which it can determine the termination rates for its allocated mobile numbers.

4.103 We therefore propose that the scope of the geographic market definition relates to the area (i.e. a terminating MCP's relevant handover points[134]) for which the MCP can determine the termination rate, either on-net or through an interconnect route, in relation to the A2P SMS sent to the UK mobile numbers allocated to it (excluding any ported-out number) and to any ported-in mobile number. This area is across the UK.

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[133] This is a similar approach to the one we used for mobile call termination. See Ofcom, *Wholesale Voice Markets Review 2021-26*, page 33 paragraph 5.22; Ofcom, *Mobile Call Termination Market Review* 2018-2021 (Final Statement), paragraphs 3.86-3.88.

[134] It is our understanding that, at the wholesale level, termination services are accessed either by an interconnecting MCP or by an Aggregator at the relevant handover point of the terminating MCP. We also understand that the relevant handover point to the terminating network in the context of A2P SMS traffic could be an A2P Gateway or an SMSC.

Our provisional conclusions on market definition

4.104 In light of the above, we provisionally conclude that the relevant markets are:

> "the wholesale A2P SMS termination services provided by *[named communication provider]* to any third party (including aggregators and other communications providers) for the termination of A2P SMS to the mobile numbers[135] allocated by Ofcom to them (excluding any ported-out mobile number), and to any ported-in mobile number, in the area that they serve (in the United Kingdom)".[136]

4.105 For clarity, as specified above, where subscribers who had switched to a new MCP - porting their numbers - have subsequently switched back to the Number Range Holder, which is still their current provider, their ("ported-back") numbers would not be excluded from the relevant market.

4.106 Based on this proposed market definition, we have provisionally identified a total of 51 separate markets for wholesale A2P SMS termination services, which relate to the mobile numbers allocated to each of the MCPs listed in Annex A5, in addition to their ported-in numbers.

4.107 These markets comprise the A2P SMS termination services relating to the mobile number allocations which are currently held by MCPs (plus their ported-in numbers), except for those MCPs which told us (in response to a formal information request) that no A2P SMS termination services are currently provided in relation to the mobile numbers allocated to them, or expected to be provided within the review period.

4.108 Specifically, the list in Annex A5 includes the following MCPs holding a UK mobile number allocation:

- 37 MCPs137which told us that they are currently providing wholesale A2P SMS termination services;
- Eight MCPs138 which told us that they are planning to start providing wholesale A2P SMS termination services within the review period; and
- Six MCPs139 (from whom we required specified information) which have not confirmed whether they are currently providing wholesale A2P SMS termination services or planning to start doing so within the review period.

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[135] A UK telephone number that begins with 071, 072, 073, 074, 075, 077, 078 or 079.
[136] We note that where an aggregator is not directly connected to [named communication provider] or is not using its direct connection to it, the termination service which is currently made available by [named communication provider] may not be A2P-specific.
[137] Vodafone Limited, Telefonica UK Limited, Hutchison 3G UK Limited, EE Limited, LycaMobile UK Limited, Lebara Mobile Limited, Sky UK Limited, Gamma Telecom Ltd, 08Direct Limited, Ace Call Ltd, Andrews & Arnold Ltd, Anywhere Sim Limited, (AQ) Limited, AQL Wholesale Limited, Circles MVNE International B.V., Citrus Telecommunications Ltd, Core Telecom Limited, FleXtel Limited, Mass Response Service GmbH, Premium Routing GmbH, Resilient PLC, Sark Telecom B.V., Spacetel UK Ltd, Stour Marine Limited, Swiftnet Ltd, Tango Networks UK Ltd., Tata Communications (UK) Limited, Telecom2 Limited, Telesign Mobile Limited, Telet Research (N.I.) Limited, TGL Services (UK) Ltd, Tismi BV, TP Global Operations Limited, Voicetec Systems Ltd, Voxbone SA, Wireless Logic Limited, Ziron Limited.
[138] Compatel Limited, Core Communication Services Limited, Global Reach Networks Limited, Home Office, Sound Advertising Ltd, Spitfire Network Services Limited, Synectiv Ltd, Wave Mobile Ltd.
[139] Icron Network Limited, IV Response Limited, Mars Communications Limited, Mobiweb Telecom Limited, Telna (UK) LTD., Vectone Mobile Limited.

4.109 We have provisionally excluded from our proposed list of relevant markets the A2P SMS termination services provided by eight of the nine MCPs[140] that are allocated mobile numbers and which operate in the Channel Islands and the Isle of Man, on the basis that they do not offer A2P SMS termination services in the UK. We have also provisionally excluded the remaining MCP operating in the Isle of Man as they have told us that they do not offer A2P SMS termination services on the mobile numbers allocated to them.[141]

4.110 If we decide to proceed with our consultation proposals, we will finalise the list of relevant markets, taking account of any relevant updates from MCPs about their future plans in relation to their provision of A2P SMS termination services.

Question 1: Do you agree with our provisional conclusion regarding market definition? Please provide reasons and evidence in support of your views.

[140] Guernsey Airtel Limited, Jersey Airtel Limited, JT (Guernsey) Limited, JT (Jersey) Limited, Manx Telecom Trading Limited, Sure (Guernsey) Limited, Sure (Isle of Man) Limited, Sure (Jersey) Limited.
[141] Bluewave Communications Limited.

5. Significant market power analysis and three-criteria test

5.1 This section firstly assesses whether providers operating in the markets provisionally defined in Section 4 have significant market power (SMP) in relation to the provision of wholesale A2P SMS termination services in the relevant markets. In the rest of this section, we refer to these providers as the "Number Range Holders" or the "terminating MCPs".

5.2 Secondly, we use the three-criteria test set out in section 79(2B) of the Act to assess whether it would be appropriate to apply *ex ante* regulation to the markets we have provisionally defined in Section 4. We lastly set out our competition concerns arising from our SMP assessment for these markets.

Market power assessment

We have assessed market power based on four criteria we consider to be the most pertinent

5.3 In Section 4 we provisionally defined the markets for A2P SMS termination.

5.4 In this section, we assess whether providers that operate in those markets have SMP, as defined in section 78 of the Act. Having taken account of relevant guidelines,[142] we have focussed our assessment on the four criteria that we regard as most pertinent to the markets under consideration, namely:

a) high current and future market shares;
b) high barriers to entry and expansion;
c) an absence of effective countervailing buyer power; and
d) evidence of pricing above competitive levels.

High market shares

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

5.6 As set out in the previous section, we are proposing to define the relevant markets as A2P SMS termination services provided by each terminating MCP to any third party (including Aggregators and other Communications Providers (CP)) for the termination of A2P SMS to the mobile numbers allocated by Ofcom to the terminating MCP (excluding any ported-out number), and to any ported-in mobile number, in the area that it serves.

[142] Section 79(2BA) of the Act says that, in considering whether to make or revise a market power determination, we may have regard to EECC materials relating to market analysis or the determination of what constitutes significant market power, such as the EC SMP Guidelines. These are available at: http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52002XC0711(02)&from=EN.

5.7 In general, once a MCP that controls its own access network has acquired a subscriber to one of its numbers, only that operator is able to terminate SMS for that subscriber, including A2P SMS. This is why we consider that A2P SMS termination is a monopoly, with MCPs holding a 100% market share in the relevant market in which they terminate A2P SMS, in the sense that only the MCP to which the recipient is subscribed can enable the delivery of an SMS to that recipient.[143]

5.8 Some Number Range Holders (e.g. MVNOs) do not control their own access network (or move the necessary elements onto their own network) and instead choose to purchase some, or all, of the network capabilities required to physically terminate SMS messages to their subscribers under a hosting arrangement. The relationship between a Number Range Holder and the MCP providing the underlying network elements (the 'hosting MCP') may extend to enabling the hosting MCP to conclude termination agreements and to terminate A2P SMS to the mobile numbers falling within the range allocated to the Number Range Holder, on its behalf. However, we consider the Number Range Holder retains a 100% market share of the market for the termination of A2P SMS to the numbers allocated to it for two main reasons:

a) Firstly, because we consider that the Number Range Holder can move hosted numbers between different hosting networks or, ultimately, a Number Range Holder may move the physical termination of their numbers onto its own network. For example, we note that [✂] moved from using a hosting partner to terminate A2P SMS, to a position where it now directly connects with A2P Aggregators for termination of A2P SMS to its subscribers.[144] We understand that [✂] also went through this change in the past[145] and [✂] is in the process of doing so.[146]
b) Secondly, the intervention of a hosting CP can only occur with the authorisation of the Number Range Holder and consequently A2P SMS termination cannot occur, directly or indirectly, without the involvement of the Number Range Holder.

5.9 We also consider that the Number Range Holder retains ultimate control over the numbers allocated to it in circumstances when it sub-allocates their use to other MCPs.

5.10 As set out in Section 4, we consider that each Number Range Holder controls also the termination of A2P SMS to its ported-in numbers because it either provides A2P SMS on-net termination (which we understand is the most common occurrence) or provides the "last leg" of A2P SMS off-net termination, which we consider as the only leg falling within the relevant A2P SMS termination market. Likewise, the A2P SMS termination rates for ported-out numbers should generally be set by the subscriber's current provider (assuming this differs from the Number Range Holder), so the relevant Number Range Holder would not have SMP for these numbers.

5.11 Therefore, each Number Range Holder effectively has 100% market share of the market for the termination of A2P SMS to the numbers that it controls, which are those falling within

[143] As explained in more detail in Section 4, a subscriber's previous provider (the 'Donor Provider') may also sometimes be involved in the provision of A2P SMS off-net termination. However, we consider that only the "last leg" of A2P SMS off-net termination is within the relevant A2P SMS termination market and this "last leg" is the one provided by the subscriber's current provider (the 'Recipient Provider').
[144] [✂] response to our information request issued on 7 October 2024.
[145] [✂] response to our information request issued on 7 October 2024.
[146] [✂] response to our information request issued on 7 October 2024.

the range allocated by Ofcom to the Number Range Holder (excluding any ported-out number) and any ported-in number.

5.12 We consider this monopoly market share for Number Range Holders will remain for the proposed three-year review period. Our reasoning above is supported by the current regulatory framework (in particular, General Condition B1 of the General Conditions of Entitlement) which gives Number Range Holders ultimate control over the use of the numbers allocated to them. We consider this framework is unlikely to change in this regard within the proposed review period.

High barriers to entry and expansion

Barriers to entry for A2P SMS termination

5.13 In Section 4 we provisionally concluded that the relevant product market comprises wholesale A2P SMS termination services that are provided by each terminating MCP to third parties (including Aggregators and other CPs), for the termination of A2P SMS to the mobile numbers allocated by Ofcom to that terminating MCP (excluding any ported-out number), and to any ported-in mobile number, in the area that it serves. Therefore, market entry into a wholesale market for A2P SMS termination specifically could only occur if a terminating MCP were to 'grant entry' to another MCP to terminate A2P SMS on the mobile numbers falling within the number range that it has been allocated by Ofcom, or on its ported-in numbers.

5.14 For an MCP that controls its own access network, no other MCP is able to offer A2P SMS termination for A2P SMS to the mobile numbers falling within its number range allocation without that MCP's consent, and it should control also the termination of A2P SMS to its ported-in numbers. This control would not include mobile numbers that have since been ported-out (unless they have been ported back to the initial MCP), as the subscriber's new MCP would control A2P SMS termination to the mobile number.

5.15 As above, we acknowledge the relationship that some Number Range Holders have with a hosting MCP, such that the latter may conclude termination agreements and terminate A2P SMS to the numbers allocated to the Number Range Holder on its behalf. Although in that scenario there is an element of 'granting entry' by the Number Range Holder to the hosting MCP, we consider that Number Range Holders retain ultimate control of wholesale A2P SMS termination in relation to the number range allocated to them.[147] This is because the Number Range Holder can move hosted numbers between hosting networks (or onto its own network) and because a hosted MCP can only be 'granted entry' with the authorisation of the Number Range Holder itself. As explained above, we consider that each Number Range Holder controls also the termination of A2P SMS to its ported-in numbers, but not the one for the ported-out numbers, so it would have SMP only in relation those which have been ported-in.

Barriers to entry and expansion for other business messaging services

5.16 We previously discussed the barriers to entry to providing A2P SMS termination. However, as we discussed in Section 4, A2P SMS is not the only way to reach mobile phone users and provide them with messages/notifications.

[147] We note that this is consistent with our position in relation to Number Range Holder control over voice termination, as set out in Ofcom's statement entitled "Wholesale Voice Markets Review 2021-26", published on 30 March 2021 (paragraphs 5.56-5.58).

5.17 While other providers could provide (and do provide) other messaging services alongside A2P SMS (e.g. WhatsApp, in-app notifications) and further services might emerge during the review period, there is a question as to whether there are barriers to them becoming substitutes for A2P SMS, such that they would constrain the market power of the MCPs with respect to A2P SMS termination on their respective mobile numbers.

5.18 As we discussed in Section 4, we found that there are technical obstacles to switching to other messaging services, perception issues from both business senders and message recipients, and issues with the reach of these other services. In particular, the evidence presented in Section 4 indicates there is not much willingness from business senders to materially switch away from A2P SMS when faced with a SSNIP as they see it as an affordable and effective product that meets their needs. They also often see drawbacks with the other channels, which limit the ability of these services to act as a competitive retail market constraint during the market review period.

5.19 Since these issues have prevented existing messaging services from becoming substitutes for A2P SMS and they are likely to affect also other prospective services, we consider there are high barriers to entry for such other messaging services during the review period.

5.20 While we have assessed the current competitive constraints on A2P SMS termination when defining the relevant market, our review has also taken a forward-looking approach. In particular, we consider that the use of other forms of messaging service is likely to expand. At some point in the future, beyond the market review period, it is possible that A2P SMS may not remain the preferred mode of business messaging and some of the other channels may develop into substitutes, acting as effective constraints on market power in the provision of A2P SMS termination services.

5.21 For example, we note that the business sender research found some organisations are either also using, or considering some usage of, other business messaging services (in addition to A2P SMS) that offer more functionality to meet the needs of younger or more tech savvy recipients, so this may further develop in the years ahead. We also understand that there are some international markets where WhatsApp has overtaken SMS as the preferred way to deliver business messaging.

5.22 However, in the context of this market review, we are concerned with whether substitution is likely to happen during our review period (i.e. before 31 December 2028) and the extent to which these other business services will act as a competitive constraint. In our view, this is unlikely to be the case during the review period, since the growth of these other services in the business messaging space comes from a small base, relative to A2P SMS, and they face challenges to adoption which act as material barriers to expansion, at least over the period we have proposed for the market review.

Provisional conclusions on high barriers to entry and expansion

5.23 We consider there is an absolute barrier to any other MCP entering the relevant market. Taking account of the current regulatory framework giving Number Range Holders ultimate control over the use of the numbers allocated to them, the absolute barrier to entry to the relevant market is likely to remain within the proposed three-year review period.

5.24 We also consider that there are barriers to other messaging services coming into the market and growing in a way in which they could act as an effective competitive constraint on A2P SMS termination pricing – at least during the market review period. As we outlined in Section 4, both existing messaging services, which are currently available alongside A2P SMS,

and any other prospective messaging service, which might become available during the review period, would need to deal with issues of visibility/prominence, perception, compatibility, reach and technological obstacles, among others.

5.25 In relation to ported numbers, we understand that each Number Range Holder controls the termination of A2P SMS to its ported-in numbers, while the termination of A2P SMS to its ported-out numbers is controlled by the subscriber's current provider (the Recipient Provider).

Absence of countervailing buyer power

5.26 Countervailing buyer power (CBP) is the degree to which a buyer can limit any attempt by the seller to set its prices above the competitive level. When significant, CBP can offset any market power that the seller may have had.

5.27 In assessing CBP, we consider the effectiveness of the potential levers by which buyers could attempt to exert CBP. Generally, whether a buyer (in this case, an Aggregator or another CP) has CBP will depend on:

a) whether a buyer can credibly threaten to buy less from that seller in response to a price rise, which usually requires it to have an alternative potential supplier or to be able to self-supply in some way; and
b) their commercial significance to the seller, in terms of purchasing a significant proportion of the total volume of the seller's output (in this case, the Number Range Holder offering A2P SMS termination services in relation to ported-in numbers and the numbers it has been allocated by Ofcom, excluding ported-out numbers).

5.28 In this context, the main lever through which a buyer of wholesale A2P SMS termination could credibly threaten to buy less from a seller in response to a price rise corresponds to an Aggregator deciding to purchase less A2P SMS termination services from the terminating MCP in response to it raising prices. However, we consider that where a terminating MCP decides to increase the price of A2P SMS termination, it would not be feasible for the Aggregator to send fewer A2P SMS messages to that terminating MCP's customers or entirely stop sending them. We consider that either of these options would undermine the viability of the Aggregator's service to MSPs and ultimately business senders. This is because it would either limit the extent to which business senders could contact some of their customers by SMS, or prevent business senders from contacting some of their customers by SMS entirely. This would likely lead to the business sender switching to another MSP/Aggregator since their messaging needs would not be met by the relevant Aggregator. We therefore consider Aggregators are unable to exercise CBP by credibly threatening to buy less A2P SMS termination from terminating MCPs in response to a price rise.

5.29 Furthermore, as we set out in Section 4, there are no viable alternatives at present to terminate an A2P SMS on the phone of a specific subscriber, other than purchasing A2P SMS termination from the terminating MCP, either directly or indirectly. We also do not consider that any existing messaging service which is currently available alongside A2P SMS, or any other prospective messaging services which might become available during the review period, could become a substitute for A2P SMS during that period. We therefore consider Aggregators are unable to exercise CBP by credibly threatening to buy less A2P SMS termination from terminating MCPs in response to a price rise, by switching to another messaging service.

5.30 We also do not consider there is evidence that the demand for A2P SMS derived by business senders gives CBP to them, or to the Aggregators that they procure services from. In theory, business senders (particularly those which are commercially significant) could exercise CBP by threatening to switch to another business messaging service in response to being notified that the price of sending A2P SMS was increasing. However, as set out above, we have assessed there is little willingness among business senders to switch to another business messaging service as a result of pricing pressures, given their preference for A2P SMS, message recipients' preference for A2P SMS and the likely cost and effort that switching would incur. Furthermore, even where certain message recipients may currently accept a switch, we do not consider it would be easy for business senders to identify where that is the case. While we understand some business senders have in some instances switched to another messaging service or curtailed their volumes in response to increases in the price of A2P SMS termination,[148] this has not prevented prices increasing further – including the prices that they pay for any remaining SMS messaging services that they procure.

5.31 We understand that in some time limited circumstances there are a few business senders that have been offered a bespoke price for A2P SMS services from MCPs.[149] We note that, during the pandemic, [✂] and [✂] froze the prices of A2P SMS termination for the [✂] and [✂] related traffic.[150] We also note that [✂] froze the price of [✂] A2P SMS for three years.[151] In some circumstances, we may consider business senders being able to negotiate an exemption from price rises or a lower price altogether could demonstrate CBP. However, we understand that the price freezes referenced here were not permanent and have not been applied to business senders more widely. Furthermore, it is not clear that some of these price freezes were driven by CBP as opposed to other considerations taken in the context of the pandemic.

5.32 Whether a buyer has CBP also depends on their commercial significance to the seller. In this context, our research identified that there is a broad array of Aggregators and MSPs,[152] such that individually we consider that they are unlikely to be commercially significant enough for MCPs to keep their prices for A2P SMS termination services low in order to retain an individual buyer.

5.33 We recognise that in some circumstances the direct buyer of A2P SMS termination from the terminating MCP will be an interconnecting MCP, where A2P SMS are terminated via an off-net route. In this scenario, an Aggregator would still be the buyer of the relevant A2P SMS off-net services from the interconnecting MCP. Therefore, we consider the interconnecting MCP is unlikely to stop buying A2P SMS termination from the terminating MCP as it would no longer be able to meet the needs of the Aggregator, and in turn, the Aggregator's customers. Similar to our reasoning above, any attempt to exercise CBP by the interconnecting CP would undermine the viability of their service and would likely lead to the Aggregator switching to another interconnecting MCP.

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[148] We note, for example, from [✂] response to question 9b of the information request issued on 12 June 2024, that a retailer [✂] switched to using email for some use cases in February 2024 in response to A2P SMS termination price increases.

[149] For example, we note that [✂] sets a bespoke price for the service it provides to [✂] and [✂].

[150] [✂] and [✂] responses to question 4 of the information request issued on 23 May 2024.

[151] [✂] response to question 4 of the information request issued on 23 May 2024.

[152] See A2P Business sender research: qualitative report for more information.

5.34 Additionally, we note that the share of A2P SMS messages going via an off-net route is small relative to the share of messages routed directly from Aggregators to the terminating MCP. Therefore, we consider the relatively limited commercial significance of A2P SMS traffic delivered by this route would further diminish the extent to which an interconnecting MCP could exercise CBP.

5.35 We therefore conclude that Aggregators, business senders and other MCPs are unable to effectively influence termination price increases by the sellers, indicating there is no CBP. We consider CBP is unlikely to develop over the proposed three-year market review period because we do not consider the factors which might enhance Aggregators', MCPs' or business senders' CBP are likely to develop significantly during that timeframe.

Pricing above competitive levels

5.36 Since 2021, the four large MNOs have increased their A2P SMS termination rates. In some cases, these price increases have been significantly above inflation.

5.37 We acknowledge that, in some instances, MCPs might have decided to increase their termination rates in anticipation of higher costs. However, as we noted in Section 3, and to be considered further in Section 6, these termination price increases followed a period of relative stability and parity. Furthermore, as we outline in Section 6 where we quote the SMS-specific costs, the evidence on SMS-specific costs does not suggest that these price increases have been commensurate with these costs.

5.38 Finally, as we discuss in paragraph 4.67 the internal documents of the four large MNOs suggest these price increases have largely been made independently of considerations regarding underlying costs or possible substitution. We consider that these price increases, which have not led to material substitution to alternatives, provide an additional indicator of SMP.

We propose to determine that each Number Range Holder has SMP

5.39 We have provisionally found that there are 51 separate markets for A2P SMS termination in relation to each Number Range Holder. Based on our assessment of the four criteria described above,[153] we propose to determine that each Number Range Holder has SMP in its relevant market, namely the provision of A2P SMS termination to third parties (including Aggregators and other CPs) for the termination of A2P SMS to the mobile numbers which have been allocated by Ofcom to it (excluding any ported-out number), and to any ported-in mobile number, in the area that it serves. This would apply where A2P SMS termination services are currently provided, or expected to be provided within the proposed review period (i.e. before 2029). For brevity, we refer to these Number Range Holders also as "terminating MCPs".

The three–criteria test under section 79(2B)

5.40 In determining whether to identify a market for the purpose of considering whether to make a market power determination, we must consider whether the three-criteria test set out in section 79(2B) of the Act is met.

[153] Market shares, barriers to entry, absence of CBP and evidence on prices and pricing behaviour.

5.41 The factors considered as part of the three-criteria test are:

a) presence of high and non-transitory barriers to entry;
b) a market structure which does not tend towards effective competition; and
c) competition law alone would not adequately address the market failure(s).

5.42 To avoid duplication, we discuss the three-criteria test in this section (instead of Section 4), as some of the factors listed above overlap with our provisional assessment of market power. For the avoidance of doubt, we use the three-criteria test to assess whether it would be appropriate to apply *ex ante* regulation to the markets we have provisionally identified. This is in addition to assessing whether providers that operate in those markets have SMP.

Presence of high and non-transitory barriers to entry

5.43 For the reasons set out above (paragraphs 5.16 - 5.25), we consider there are high barriers to entry and that these barriers are likely to remain high and non-transitory over the proposed three-year review period.

A market structure which does not tend towards effective competition

5.44 We analysed competition in the A2P SMS termination market as part of our market definition stage (in Section 4) and our assessment of SMP above. We consider the factors set out there are also relevant for the assessment of this criterion. In particular:

- We consider there is limited demand-side substitution at the retail level, which is unlikely to constrain the price of A2P SMS termination, either currently or for the duration of the market review period.
- We understand many business senders find that switching to another messaging service is not a straightforward process and there is limited evidence of business senders doing this.
- We note demand for A2P SMS does not appear to have been significantly affected by increases in termination prices, which would be consistent with a highly inelastic demand curve, and indeed there appears to have been further expansion in demand despite increases in prices.
- Lastly, we note that demand for other business messaging services (i.e. WhatsApp for Business, RBM) is currently relatively low.

5.45 In addition to these factors, as we explain in our assessment on market power above:

- Number Range Holders hold a monopoly on the market for the termination of A2P SMS terminating to the numbers that they control (excluding any ported-out number), and to any ported-in mobile number.
- There is an absolute barrier to any other operator entering the market for the termination of A2P SMS terminating on the numbers that the Number Range Holder controls (excluding any ported-out number and including any ported-in mobile number), which is likely to remain for the proposed market review period. There are also barriers to entry and expansion for other messaging services coming into the market and growing in a way in which they could act as an effective competitive constraint on A2P SMS termination pricing.
- Aggregators, interconnecting MCPs and business senders are unable to effectively influence termination price increases by the sellers, indicating there is no CBP, and these conditions are unlikely to change over the proposed market review period.

5.46 We consider it likely that, in some cases, increases to the price of wholesale A2P SMS termination since December 2020 have exceeded cost increases. We further consider that, absent regulatory intervention, further price increases would risk the price of wholesale A2P SMS termination being set (and maintained) at an excessively high level (substantially above the competitive level), so as to have adverse consequences for end users.

5.47 For these reasons, we consider that the market structure will not tend towards effective competition during the proposed review period.

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

5.48 We consider that competition law would not be sufficient, by itself, to address our competition concerns in this market – barriers to entry will persist and the relevant markets will not tend towards effective competition within the proposed review period. We also consider that intervention based on competition law would not be sufficiently fast and effective to prevent potential harms stemming from the potential ability and incentive for terminating MCPs to distort competition.

5.49 In contrast, *ex ante* regulation would be more effective in addressing the ability and incentive for terminating MCPs to distort competition. It would also be more efficient and effective to enforce and would (through appropriately determined SMP remedies) provide stability to MCPs, Aggregators, MSPs and business senders. We therefore consider that *ex ante* regulation is necessary to maintain effective competition in this market and to provide benefits to business senders and consumer/citizen recipients of A2P SMS. Our provisional view is that, through appropriate *ex ante* regulation to maintain effective competition, we would thereby further the interests of consumers and citizens in this market by addressing the competition concerns identified below.

Provisional conclusion on the three-criteria test

5.50 In light of the analysis set out above, we provisionally consider that our proposed A2P SMS termination market definition satisfies the criteria set out in section 79(2B) of the Act and that it is therefore appropriate for Ofcom to identify it as a market for the purpose of considering whether to make a market power determination.

Provisional conclusion on SMP

5.51 On the basis of the above, we provisionally conclude that, where wholesale A2P SMS termination services are currently provided, or expected to be provided within the review period, each MCP holding the relevant number allocation (i.e. the Number Range Holder) has SMP in the corresponding relevant market. Each market, and the proposed SMP designation, includes ported-in numbers and excludes ported-out numbers. These providers are listed in Annex A5.

5.52 For the reasons set out in paragraphs A6.74-A6.76, we propose that, where a provider is part of a group of companies, the proposed SMP designation would hold also with respect to any other members of the group, in so far as they operate as Communications Providers in the relevant market.

Competition concerns from potential future exercise of SMP

5.53 Our primary competition concern, arising out of the SMP we have provisionally found in each market, is the risk of future adverse effects arising from price distortion. In particular, we consider there is a risk of terminating MCPs using their ability and incentive to set (and maintain) their prices for A2P SMS termination services at an excessively high level (above the competitive level) so as to have adverse consequences for end-users of public electronic communications services.

5.54 There is a consequential risk of future adverse consequences for end users of public electronic communications services. In particular, we are concerned that the future exercise of SMP could lead to retail price increases for A2P SMS messaging services purchased by business senders. In addition, business senders may reduce their use of these messaging services as a result of increased prices, with an associated loss of utility for message recipients due to fewer valued messages being sent to them. For business senders, we are also concerned that retail price increases may stifle growth and innovation across private and public sectors, given it could inhibit their ability to communicate effectively and efficiently with their customers or citizens.

5.55 Furthermore, we are concerned that the future exercise of SMP may reduce the quality of services provided to Aggregators, and in turn to end users, relative to the service offered in a competitive market. This could arise because purchasers of A2P SMS termination services cannot discipline poor service by switching away from the terminating MCP to an alternative provider. An example of reduced service quality is the unwillingness of terminating MCPs to offer longer contacts at fixed prices, making it difficult and more costly for Aggregators and MSPs to meet the demands of some business senders for longer contracts at fixed prices for A2P SMS messaging services, potentially distorting retail competition.

Question 2: Do you agree with our provisional conclusion regarding SMP? Please provide reasons and evidence in support of your views.

Question 3: Do you agree with our provisional conclusion regarding the three-criteria test set out in section 79(2B) of the Act? Please provide reasons and evidence in support of your views.

6. Remedies and impact assessment

Introduction

6.1 This section describes our approach to, and sets out proposals for, remedying the competition concerns arising from the significant market power (SMP) identified in our provisional analysis of A2P SMS termination markets.

6.2 Unless the context otherwise requires, any reference to "**terminating MCPs**" in the rest of this section means each of the MCPs listed in Annex A5, i.e. the MCPs which we have provisionally identified as having SMP in relation to the provision of wholesale A2P SMS termination services.

Summary of our proposals

6.3 We propose to set a charge control on A2P SMS termination rates at a level based on the average wholesale prices charged for A2P SMS on-net termination by the four large MNOs in December 2020, with an appropriate inflation-based indexation. We consider this remedy would be the most appropriate and proportionate response, given the risk of harm derives primarily from terminating MCPs' ability and incentive to set and maintain their prices for A2P SMS termination services at an excessively high level (above the competitive level).

6.4 This single maximum cap would apply to each terminating MCP for the termination of A2P SMS traffic to the mobile numbers they have been allocated by Ofcom (excluding ported-out numbers) and to their ported-in numbers. We propose the cap will apply to all A2P SMS termination, irrespective of the route of A2P SMS traffic and whether the direct purchaser is an Aggregator or another interconnecting MCP (i.e., regardless of whether the A2P SMS is terminated via the on-net or off-net routes).

6.5 We propose that the cap would be equal to approximately 1.96p (in September 2024 prices).[154] We plan for this cap, updated by inflation to September 2025, to commence on 1 January 2026, and it would remain in place, with subsequent inflation adjustments, for three years.

Approach to remedies

6.6 In the previous section we provisionally concluded that terminating MCPs have SMP in the relevant market, i.e. the market for termination of A2P SMS to the mobile numbers allocated by Ofcom to them (except for ported-out numbers) and to their ported-in numbers, through either a direct on-net route or through the interconnect route. We also provisionally found that this means that terminating MCPs have both the ability and the

[154] To ensure higher precision of subsequent calculations, we will use four digits after the decimal point for this number (i.e. 1.9637p). The end result will then be rounded to two digits after the decimal point.

incentive to exercise their market power by fixing and maintaining A2P SMS termination prices at an excessively high level.

6.7 In turn, as discussed at the end of the previous section, this increase in prices could lead to a reduction in the use of these services, and the resulting loss in utility for message recipients, as well as a reduction in the quality of services that could be offered compared to a competitive market.

6.8 In light of our provisional market analysis and SMP assessment, we consider that regulation is necessary to prevent terminating MCPs from exploiting their market power. In the absence of intervention, we consider it likely that wholesale prices would continue to increase, leading to consumer harm. We also note that, as set out in Section 2, the termination rates charged by the four large MNOs rose again in spring 2024, despite us having noted the concerns raised by Aggregators regarding the potential impacts on the retail market in our published letter of September 2023.[155]

Insufficiency of competition law alone

6.9 Before proposing *ex-ante* regulation, we must consider whether competition law would be sufficient to avoid the risk of terminating MCPs exploiting their market power. For the reasons set out in Section 5 as part of our provisional assessment of the three-criteria test under section 79(2B), we consider that competition law alone would not be sufficient to address our competition concerns in the relevant markets.

Form of our proposed remedy

6.10 We have considered the SMP conditions authorised under section 87 of the Act to identify which remedy would be the most appropriate and proportionate response to address our competition concerns in the relevant markets, as identified in Section 5. Specifically, we have considered the conditions about network access pricing, as well as other network access conditions.

Non-pricing remedies (e.g. a pricing notification requirement)

6.11 We consider that potential non-pricing remedies, such as a pricing notification requirement, would not be sufficient to address our competition concerns, as set out in Section 5. This is because the potential harms derive primarily from the risk of terminating MCPs using their ability and incentive to set and maintain their prices for A2P SMS termination at an excessively high level, and a pricing notification requirement would not directly address this risk.

Requirement to provide network access on fair and reasonable terms and conditions (including pricing)

6.12 We have also considered network access conditions which would constrain the price of A2P SMS termination without setting a maximum price for it. In particular, we have considered whether requiring terminating MCPs to provide network access in response to a reasonable request and on fair and reasonable terms and conditions, including pricing, would be sufficient to address our competition concerns.

[155] Letter to four large MNOs - Business messaging services and Ofcom's wholesale voice markets review 2026-31

6.13 In principle, these remedies can be argued to be less restrictive than setting the maximum price for A2P SMS termination, as they would seek to limit terminating MCPs' ability to exploit their SMP while leaving terminating MCPs with more flexibility to set their own prices. However, in practice, they would not be effective in this market since they would provide less regulatory certainty compared to setting the maximum price for A2P SMS termination, with details of implementation subject to interpretation and dispute resolution. These factors may result in delays (e.g. any uncertainty arising from disagreement between the relevant parties as to whether A2P SMS termination charges are "fair and reasonable" might not be resolved until completion of a dispute resolution process), which would undermine our objective to address our competition concerns in the relevant markets, as identified in Section 5.

Imposing a charge control by setting the maximum price for A2P SMS termination

6.14 In our view, imposing a charge control by setting the maximum price at which A2P SMS termination can be offered would, as such, provide a more direct route to addressing our competition concerns in the relevant markets, as identified in Section 5.

6.15 For this market, we have considered two main approaches to setting the maximum price for A2P SMS termination: (i) setting an upper bound (i.e., a "cap") based on our estimate of the MCPs' reasonably incurred costs of providing A2P SMS termination (i.e., a "cost-based" cap), or (ii) setting a cap without explicitly tying it to our estimate of such costs.

6.16 Choosing between these potential approaches involves us exercising our regulatory judgement in setting the regulated cap, which seeks to estimate the prices that would arise in competitive markets. In doing so, we have considered the opposite risks of setting the cap too high or setting it too low, in addition to any relevant proportionality considerations.

6.17 On the one hand, setting the cap too high could result in terminating MCPs exploiting their SMP, ultimately resulting in detrimental effects on citizens and consumers. On the other hand, setting the cap too low could prevent terminating MCPs from recovering their reasonably-incurred costs.[156] This might ultimately result in a detrimental effect on citizens and consumers (e.g. if terminating MCPs stopped supplying A2P SMS termination in response to regulation) and have other knock-on effects (e.g. lower investment in mobile networks as a whole).

[156] To help us assess whether current price levels are cost reflective, we asked the four large MNOs to provide data on their SMS-specific costs (i.e. not including shared network costs) which might have explained the price increases in recent years. Specifically, we asked for both OPEX and CAPEX information and, where possible, which of these costs were specific to A2P SMS. As A2P SMS traffic uses many of the same network components as P2P SMS traffic, we were told it can be hard to distinguish between these costs. As a result, the CAPEX and OPEX costs submitted to us were either approximations of those associated with A2P or the costs for both P2P and A2P. We also note that the cost categories provided were not consistent across the different MNOs that submitted information. In our analysis, we took the CAPEX costs and annualised them using the asset lives provided and the discount rate we used for the MCT charge control model. We then added this figure to each respective MNO's 23/24 OPEX cost and compared this to the A2P-related revenues of each MNO. Our results showed that in FY23/24 SMS-specific costs were [✂] proportion of the FY23/24 A2P SMS termination revenues, and did not exceed [✂]% of the A2P SMS termination revenues for the four large MNOs. While we do not have historical information on these SMS-specific costs, it is clear that their overall level of these costs is lower than the overall increase in revenues resulting from the price increases and, therefore, it is unlikely that these price increases would be explained by increases in SMS-specific costs.

6.18 Moreover, setting a low level for the cap, which is not reflective of what the competitive level would be, creates a risk of hindering the potential growth of other messaging services, which may contribute to competition and innovation in the broader retail business messaging market in the future.

6.19 A cost-based cap would seek to identify which costs are reasonably incurred by terminating MCPs for providing A2P SMS termination and then limit prices to be no higher than that level, allowing for a fair return on investment. While there are many different approaches of varying complexity to setting cost-based caps, they tend to require the collection of detailed cost data and need considerable time and resources to scope, specify and determine. The regulatory burden on stakeholders can be higher for a cost-based cap than for other types of remedy.

6.20 We can, and in various cases have, attempted to minimise this burden as much as possible, taking a high-level approach to estimating reasonably incurred costs. This can be appropriate depending on the context but can also increase the risk of regulatory failure if cost estimates are over-simplified, which could result in prices set significantly differently from what would be expected in a competitive market.

6.21 We understand part of the costs relating to A2P SMS are shared with other services, such that decisions around cost allocation and costing methodology would significantly influence any result. For example, it is conceivable that an estimation of the pure incremental cost of providing A2P services would yield a lower level of cost-based pricing than the pricing we are proposing, although we have not done the modelling to confirm this. Decisions on how costs are used, if made solely at a high level, could risk failing to prevent excessive prices if they were set too high, or failing to allow for cost recovery if they are set too low.

6.22 The main alternative we have considered to a cost-based cap is a price cap which is not explicitly derived from a cost estimate. This would be intended to set a reasonable upper bound on the prices of A2P SMS termination to prevent excessive pricing, without explicitly tying this to an estimate of providers' costs. This option would be less burdensome on stakeholders as it would not require provision of detailed cost information and would not delve into questions of cost allocation.

6.23 It would also be less likely to risk failing to allow for cost recovery as its aim would be to provide a reasonable approximation of what prices would have been at the competitive level and, therefore, a level that would have allowed for cost recovery. However, there could be some risk to addressing our competition concerns in the relevant markets, as identified in Section 5, if the level for the cap is set too high.

6.24 As we explain in greater detail below, we consider that the A2P SMS on-net termination prices set before 2021 are a reasonable approximation of what prices would have been in a competitive environment. We note that pricing was similar across the four large MNOs from 2019 to 2021, which is broadly what we would expect to see in competitive markets for services which are largely undifferentiated, and which are likely to have similar costs of provision.

6.25 Therefore, a price cap reflecting the prices before 2021 is likely to allow for cost recovery while at the same time having a low risk of being set too high. Furthermore, the inflation adjustment we propose should mitigate the risk of setting prices below the competitive level during the market review period.

6.26 In light of the above, we consider that a price cap, which is not explicitly derived from a cost estimate and is instead based on historical prices with an inflation adjustment, is the most appropriate and proportionate form of charge control in this specific context.

Other potential non-pricing remedies, in addition to a price cap

6.27 We have considered whether other potential remedies, in addition to a price cap, are necessary to address our competition concerns, as identified in Section 5. In particular, for the reasons set our below (where we compare Option 1 with Option 2), our initial view is that it is not necessary to supplement our proposed price cap (under Option 2) with a requirement for terminating MCPs to provide Aggregators with network access for A2P SMS termination upon a reasonable request. We are proposing to apply the price cap to all types of A2P SMS termination, irrespective of the route of traffic. As such, we do not consider there is a risk that MCPs would refuse to grant network access to Aggregators, as this would impair the revenues that they can yield from terminating the A2P SMS traffic that Aggregators carry.

6.28 Likewise, we do not consider it necessary to impose a prohibition of undue discrimination or a requirement to publish charges, for example. We consider it unlikely that MCPs would discriminate unduly between different Aggregators, and an Aggregator would be able to purchase A2P SMS off-net termination from an interconnecting MCP if a less favourable (and potentially discriminatory) offer is made directly by the terminating MCP. In addition, Aggregators' concerns seem to relate primarily to the scale/frequency of termination price increases and their short notice period, rather than to any failure by terminating MCPs to communicate their new rates, so we consider that a requirement to publish charges is not necessary.

6.29 Therefore, we are not proposing to impose further regulatory conditions beyond a price cap, either in addition or as an alternative to the price cap.

We therefore propose a price cap based on historic prices with indexation

6.30 As we explain in greater detail in the following sub-sections, our preferred approach is a single price cap based on historical price levels with indexation. Our proposed approach takes into account that there is always a level of judgement required in setting regulated prices which seek to estimate the prices that would arise in competitive markets. However, we consider that our proposed approach is appropriate and proportionate to the circumstances and balances the risks of prices being set too high and the risks of them being set too low.

6.31 In conclusion, our initial view is that a price cap is both a necessary and sufficient remedy to address the competition concerns we have identified in Section 5.

Question 4: Do you agree with our provisional view that setting a price cap on A2P SMS termination rates (based on historical prices with indexation) would be the most appropriate and proportionate response for addressing our competition concerns arising from SMP (identified in Section 5)? If not, please explain why.

Potential approaches to the scope of the charge control

6.32 We have identified three potential options which involve taking different approaches to the scope of a price cap:

- Option 1 - A cap on A2P SMS on-net termination rates only;
- Option 2 - A cap on A2P SMS termination rates irrespective of the route of A2P SMS traffic; or
- Option 3 – A cap on A2P SMS termination on the final leg of the (indirect) off-net route only (i.e. the interconnect charge)

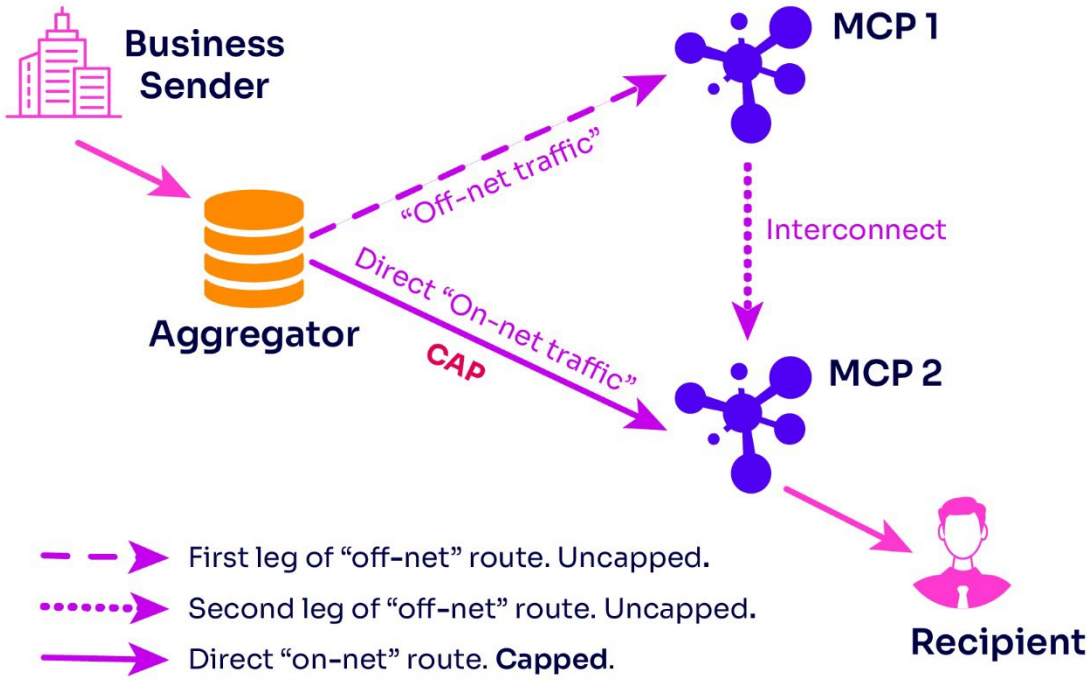
6.33 Of these three approaches to the scope of the charge control, we consider there are two main options: Option 1 and Option 2 as explored in more detail below.

Option 1 - A cap on A2P SMS on-net termination rates only

6.34 Under this option we would impose a charge control on the rates set by MCPs for terminating A2P SMS traffic to the mobile numbers allocated to them (excluding ported-out numbers) and to their ported-in numbers, which is received directly from Aggregators via a direct connection (i.e. the "**on-net traffic**"), as shown in Figure 6.1 below.

6.35 This cap would not apply to any step of the "**off-net route**": (i) the "off-net" rates interconnecting MCPs charge to Aggregators for forwarding A2P SMS traffic to the relevant terminating MCPs would remain unregulated and; (ii) the interconnect rates charged by terminating MCPs for A2P SMS traffic received via the interconnect channel would also remain unregulated.

Figure 6.1: A2P SMS charge control under Option 1



6.36 Option 1 would largely address the exercise of SMP by the larger terminating MCPs, because most A2P SMS traffic is currently terminated via the (direct) on-net route.[157]

6.37 However, since the (indirect) off-net route would remain unregulated, some terminating MCPs could still potentially exploit their market power in the market of A2P SMS termination, for some or all of the traffic they receive through the interconnect route, by setting termination rates for A2P traffic using this route above the on-net termination cap.

6.38 As the off-net termination route would then be more profitable for the terminating MCPs compared to the regulated on-net route, there is also the risk that they would have an incentive to divert traffic to the off-net route by making direct connection with (some or all) Aggregators difficult (e.g. by creating an onerous process to achieve this direct interconnection), or by discouraging/reducing usage of the (direct) on-net route. In our view, Option 1 would therefore not fully address MCPs' ability and incentive to exercise their market power (as we have identified in Section 5).

6.39 If Aggregators were always able to easily switch between the "on-net" and "off-net" routes, a cap on on-net traffic should also indirectly constrain MCP's ability to exploit their market power in A2P SMS termination through the interconnect route (i.e., by setting termination prices for A2P traffic using this route above the on-net cap). However, as we have explained above, under this option there is a risk that the "on-net" route (i.e. direct connection) would not be available to Aggregators under some circumstances – even that on-net access may be denied altogether by some MCPs. This in turn implies that, under this option, Aggregators may be exposed to the risk of being exploited through the unregulated "off-net" route (i.e. where termination rates are uncapped), which would be their only option to be able to deliver A2P SMS to some end recipients.[158]

6.40 We could aim to somewhat mitigate these risks by imposing an additional network access condition in our proposed remedies, which would require each terminating MCP to provide Aggregators with network access for A2P SMS termination upon a reasonable request. This could enable Aggregators to seek enforcement action from Ofcom against any unreasonable refusal by individual terminating MCPs to directly interconnect with them. While this might not necessarily restrict pricing of termination through the off-net route, it could inhibit the ability of MCPs to force traffic onto the off-net route (i.e. it generally should be possible for Aggregators to seek on-net access on reasonable terms).

6.41 However, the reliance of this option on a network access remedy to address the risk of exercise of market power through the unregulated off-net route would provide less regulatory certainty than Option 2. For example, any uncertainty arising from disagreement between the relevant parties as to whether access has been requested on reasonable grounds might not be resolved until completion of a dispute resolution process.

6.42 Moreover, given there are 51 terminating MCPs which we have provisionally identified as having SMP, it may not be economically or technically viable for each Aggregator to directly

[157] Clarifications from the four large MNOs to question 2a of the information request issued on 23 May 2024. The share of A2P SMS traffic the four large MNOs received to be forwarded to other networks (i.e. off-net traffic) constituted between [✂] and [✂]% in 2023/24 out of the total A2P SMS traffic they received from purchasers of A2P SMS termination.

[158] It should be noted that there may be reasons why Aggregators may need to rely on an off-net route, for example because they are uncertain about the final destination of the message or because of an outage on the on-net route. In these circumstances Aggregators would be exposed to the unregulated off-net route with no option to use a regulated on-net route.

connect with each individual terminating MCP (including those with relatively small numbers of subscribers) and incur the associated costs, such as the costs related to setting up the necessary agreements and the technical requirements to allow the Aggregator to directly connect to the MCP.[159] As a result, some Aggregators may continue to be exposed to the risk of some MCPs, with which they do not have a direct connection, exercising their market power, for A2P SMS traffic that continues to be terminated via interconnect routes.

6.43 Therefore, even if we were to impose a network access condition, some traffic may still move exclusively through the off-net route. This could leave MCPs, especially smaller MCPs, with the ability to set excessive prices for A2P SMS termination via the off-net route.[160]

6.44 We also note that some terminating MCPs (e.g. [✂] and [✂]) act both as Aggregators (buying on-net termination from the terminating MCPs) and as interconnecting operators. This dual role may create further uncertainty in relation to which traffic would be subject to charge control (e.g. potential risk of obfuscating the nature of the traffic).

6.45 For these reasons, we do not consider that Option 1 would be effective since it would not fully address the risk identified in Section 5 that terminating MCPs have the ability and incentive to set and maintain prices for the termination of A2P SMS at an excessively high level, so as to have adverse consequences for end users.

Option 2 – A cap on A2P SMS termination rates irrespective of the route of A2P SMS traffic

6.46 Under Option 2 we would impose a charge control on the termination rates set by terminating MCPs for the termination of A2P SMS traffic to the mobile numbers allocated to them (excluding ported-out numbers) and to their ported-in numbers, including both "on-net traffic" and traffic received via an interconnect route.

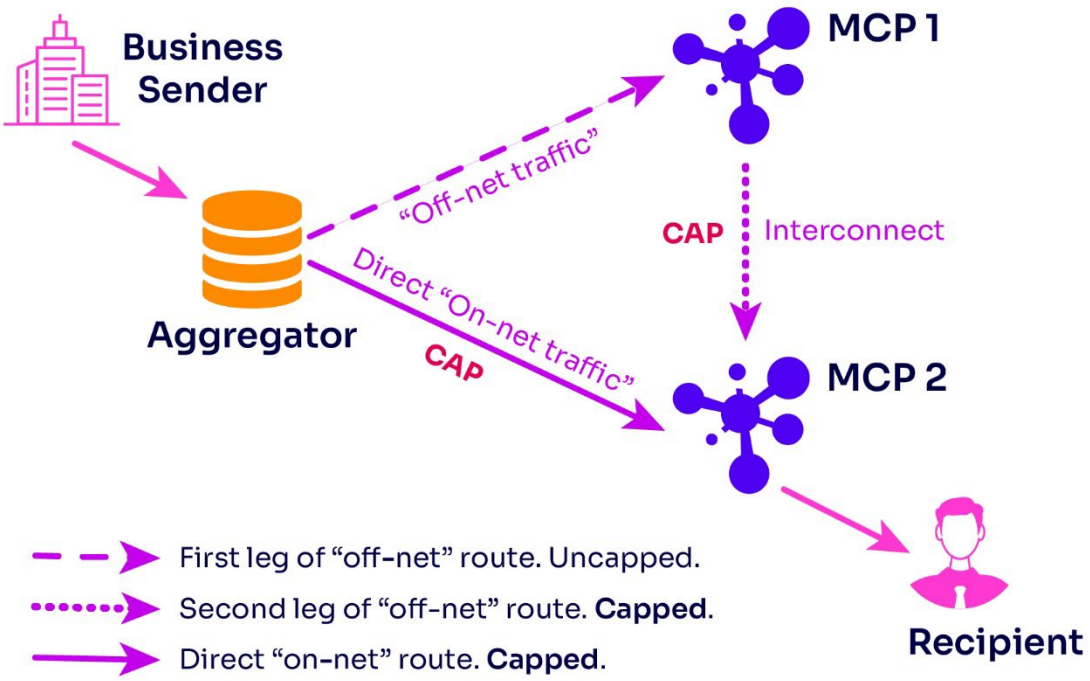
6.47 For the avoidance of doubt, where the A2P SMS traffic 'transits' through one or more interconnecting MCPs before reaching the terminating MCP, our proposed cap would only apply to the "last leg" of termination, i.e. it would only apply to the terminating MCP.

6.48 As shown in Figure 6.2 below, Option 2 would mean the terminating MCP's price for both A2P SMS termination under the (direct) on-net route and via the interconnect route would be capped. However, the initial step of the (indirect) off-net route would not be regulated.

[159] Establishing a direct connection may require Aggregators to go through a due diligence process, agree technical and commercial terms, get access to platforms, systems and interfaces, set up billing agreements, etc. It is reasonable to expect that these actions would entail a cost and, therefore, it may only be reasonably practicable for an Aggregator to incur such cost if the Aggregator in question expects to send a significant amount of A2P SMS traffic through the (direct) on-net route.

[160] This would be in line with the pricing behaviour noted at paragraphs 3.112 and 4.65 of our March 2018 statement about the 'Mobile Call Termination Market Review 2018-2021'.

Figure 6.2: A2P SMS termination charge control under Option 2



6.49 Unlike Option 1, we consider that Option 2 would be effective in addressing the risk identified in Section 5 that terminating MCPs have the ability and incentive to set and maintain prices for the termination of A2P SMS at an excessively high level. This is because it would cap both the direct on-net route and the last leg of the indirect off-net route of the A2P SMS traffic (as opposed to just the on-net route as with Option 1).

6.50 Option 2 would not require an additional network access condition, and so would avoid any unintended consequences arising from this and the risks that it may be circumvented in some way. Further, by providing more regulatory certainty (relative to Option 1) about the pricing of A2P SMS termination going via the interconnect route, Option 2 should also offer greater resilience because the interconnect route should provide a viable backup option for Aggregators as A2P SMS termination would be provided under similar terms, in the event of technical issues with the direct on-net route.

6.51 Under Option 2, we propose to apply a single charge control, irrespective of the route of the A2P SMS traffic, because we understand there are no material cost differences for the terminating MCP.

6.52 While under Option 2 the initial step of the "off-net" route would not be capped, we expect that "off-net" prices charged to Aggregators by interconnecting MCPs would only be marginally higher than the price they pay for A2P SMS termination on the interconnect route. This is because any attempt by an MCP to set a price for A2P SMS off-net termination materially above the price for A2P SMS termination on the interconnection should be easily undermined by another MCP buying A2P SMS termination on the interconnect route and offering its own lower priced off-net service.

6.53 We expect that a small share of A2P traffic would continue to go via the off-net route in line with current market dynamics.[161] Under Option 2 terminating MCPs would retain flexibility in terms of the Aggregators or interconnecting MCPs with whom they establish a direct connection for A2P SMS termination. The same would be true for Aggregators, who would have the option of acquiring (i) A2P SMS on-net termination, which would be subject to a charge control, from some terminating MCPs, or (ii) A2P SMS off-net termination for other MCPs/traffic, which, while the first leg is not subject to a charge control, the final leg would be and, therefore, expected to be priced at a similar level.

6.54 We understand that, at present, MCPs use the same interconnect route for P2P and A2P traffic. Furthermore, we understand that, at present, there are single reciprocally agreed prices for interconnected traffic between any two interconnected MCPs, and these prices are usually the same for all traffic, regardless of whether it is A2P or P2P. Below, in our Impact Assessment, we discuss the potential impact if P2P SMS termination is also priced in line with the charge control for A2P SMS termination, as well as possible alternatives to mitigate this impact.

Option 3 – A cap on A2P SMS termination on the final leg of the (indirect) off-net route only (i.e. the interconnect charge)

6.55 For the avoidance of doubt, we consider that capping only the final leg of the (indirect) off-net route (i.e. the interconnection charge) (Option 3) would not be effective since it would not fully address the risk identified in Section 5 that terminating MCPs have the ability and incentive to set and maintain prices for the termination of A2P SMS at an excessively high level. This is because it would not provide any regulatory certainty in relation to the (direct) on-net route, which is the route most used by Aggregators. Option 3 would also carry a greater risk of terminating MCPs blocking A2P traffic through the interconnect route from taking place, since this would force Aggregators to pay the unregulated termination price for the on-net route.

Provisional conclusions on the scope of the charge control

6.56 For the reasons set out above, we provisionally conclude that only Option 2 would be effective in addressing the risk identified in Section 5 that terminating MCPs have the ability and incentive to set and maintain prices for the termination of A2P SMS at an excessively high level. We consider that the other options (Options 1 and 3) would not be effective since they would not fully address such risk.

Question 5: Do you agree with our provisional view that Option 2 would be effective in addressing the risk (identified in Section 5) that terminating MCPs have the ability and incentive to set and maintain prices for the termination of A2P SMS at an excessively high level, while Options 1 and 3 would not fully address that risk? If not, please explain why.

[161] For example, where a mobile number has been ported from one MCP to another because the relevant subscriber has switched provider, the Aggregator may sometimes be unaware of this so they may mistakenly send the A2P SMS to the wrong MCP, requiring it to be forwarded on to the current terminating MCP.

Setting the level of the charge control

6.57 We now set out our approach and proposal to setting the level of the proposed price cap for A2P SMS termination.

A single cap for all terminating MCPs when terminating A2P SMS

6.58 We propose to set the charge control at the same level for all terminating MCPs. This would be consistent with our approach to mobile call termination and also takes account of the relatively similar prices charged by the UK's four large MNOs before the wave of price increases since 2021. We propose the charge control should be based on an average of A2P SMS on-net for termination rates charged by the four large MNOs in December 2020. This was 1.60p, which is equal to approximately 1.96p in September 2024's prices (when allowing for inflation at CPI since 2020), and we propose it would be adjusted by inflation going forward.

We consider setting a single cap based on December 2020 prices to be a reasonable reference point

6.59 Our initial view is that the prices set by the four large MNOs in December 2020 for on-net termination of A2P SMS, is a reasonable reference point of what a competitive price level could be.[162] As we noted in Section 3, pricing of A2P SMS on-net termination was flat between 2019 and May 2021, which is broadly what we would expect to see in competitive markets for services which are largely undifferentiated, and which are likely to have similar costs of provision.

6.60 We therefore consider it appropriate and proportionate to set a single price cap for all MCPs, rather than seeking to reflect any material difference in the costs incurred by each MCP, which would likely involve a detailed cost-modelling exercise.

6.61 Therefore, we consider historical prices (2019-2021 prices, where there was a period of pricing stability) are a reasonable starting point to calculate what an appropriate current price might have been, in the absence of the significant increases in pricing of A2P SMS termination since 2021.

Calculating the average price for A2P SMS on-net termination in December 2020

6.62 To calculate the average price for A2P SMS on-net termination in December 2020, we have added up each of the standard A2P SMS on-net termination rates charged by the four large MNOs, and divided the total by four. [163] This calculation gives an average price of **1.5979p**.

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[162] While we do not have complete information regarding historic on-net termination rates for all MCPs, the termination rates for those other MCPs we received data from ([✂], [✂] and [✂]) are broadly in line with those of the four large MNOs. We consider that using the average of the on-net rates of the four large MNOs provides a reasonable indicator for all MCPs, particularly given their combined market share in the mobile services market (together with those MCPs for whom we have the data) is such that they terminate most A2P SMS traffic.

[163] This corresponds to the simple arithmetic mean and is calculated as [✂])/4 where numbers in brackets represent standard A2P SMS on-net termination rates for [✂], [✂], [✂] and [✂], respectively. Standard prices for [✂], [✂], and [✂] vary by volume purchased and have lower and upper levels (e.g. [✂]) and for

We assume that taking an average of these four prices provides a reasonable representation of what an average competitive price would have been in December 2020. Furthermore, prices from these four MNOs were within the same range[164] , therefore actual prices for each MNO were sufficiently close to this average.

We propose to apply an inflation adjustment, based on CPI

6.63 We propose to apply an inflation adjustment to our reference point of 1.5979p in order to calculate our initial price cap (i.e., the cap applying in the first relevant period of twelve months).

6.64 We also propose to allow the cap to increase annually during the review period by a measure of inflation, thereby providing some allowance for the change in underlying costs, including common costs.

6.65 We consider that CPI would be an appropriate index for the proposed adjustments. CPI provides a preferable measure of inflation, compared to RPI, because RPI stopped being classified as a National Statistic by the UK Statistics Authority (UKSA) in March 2013, while CPI remains a National Statistic and is the basis of the inflation target used by the Bank of England.[165]

6.66 We also consider that inflation indexation with the use of CPI would provide a sufficient allowance for possible changes in the underlying costs of providing the service.

Calculating the CPI adjustments

6.67 As described above, our proposed charge control takes the December 2020 average price as a reference point and adjusts it to take account of the level of inflation since then. This price would then be updated annually during the review period to account for actual inflation during the previous 12-month period as set out in the paragraph 6.75 below.

Relevant periods

6.68 We propose that the charge control would remain in place over the same three-year period as the market review, which we currently plan to start on 1 January 2026, until 31 December 2028. Moreover, as discussed further in paragraphs 6.117 – 6.121, we consider it reasonable and proportionate to allow for a three-month implementation period from publication of the Statement to the start of the charge control. Hence, if we publish our final statement by the end of Q2 2025/26, we expect that the proposed cap would apply from 1 January 2026.

6.69 We propose to determine the formula for the calculation of the price cap for each relevant period of twelve months within the three-year market review period. For example, if the charge control starts on 1 January 2026, the relevant periods would be:

i) 1 January 2026 - 31 December 2026;
ii) 1 January 2027 - 31 December 2027; and
iii) 1 January 2028 - 31 December 2028.

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these MNOs we took a mid-point between the lower and upper bound of the standard price (e.g. [✂]). [✂]; [✂] is a weighted average rate for A2P SMS on-net termination based on their revenues and volumes between 2019Q2 and 2021Q1 inclusive.

[164] Difference between the highest and the lowest was less than 10%.

[165] We note that this is consistent with our approach for setting the charge control for Mobile Call Termination (MCT). See, in particular, paragraphs 8.15 of our March 2015 MCT statement and paragraph 6.7 of our March 2018 MCT statement.

Inflation adjustments

6.70 According to our proposed approach, the charge control would be updated annually during the review period to account for actual inflation during the previous 12-month period.

6.71 More specifically, based on our current assumptions on the start date for the charge control, we propose that the charge control starting on the 1st of January of each year "*t*" (i.e., 1 January 2026, 1 January 2027, 1 January 2028) would be updated to account for inflation using the 12-month change in CPI up to September of the preceding year "*t-1*".

6.72 Therefore, there will be a three-month lead time between the CPI index to be used and the charge control update coming into force, thus allowing terminating MCPs more than two months' notice[166] of the CPI value for the inflation adjustment. We consider this is a reasonable period to prepare for the new level of the cap from January of the following year.

Starting price for charge control

6.73 If the charge control starts, for example, on 1 January 2026, to determine the first charge control effective from that date, we would require:

a) the starting price for the charge control in nominal prices of September 2024; and
b) the change in CPI between 1 October 2024 and 30 September 2025, which should be known in October 2025.

6.74 As we previously explained, we consider that the average termination price in December 2020 (i.e. 1.5979p per A2P SMS) is a reasonable reference point. However, the starting price should be in nominal prices of September 2024, which means that we need to account for inflation between December 2020 and September 2024. This means that our proposed starting price in nominal prices of September 2024 is 1.9637p per A2P SMS.[167] [168]

The charge control formula

6.75 When the CPI of September of each year is known (in October of each year), the charge control starting on the following January 1st can be calculated as per the formula below.

a) for 2026 calendar year: $1.9637 \times (100\% + CPI_1)$;
b) for 2027 calendar year: $1.9637 \times (100\% + CPI_1) \times (100\% + CPI_2)$; and
c) for 2028 calendar year: $1.9637 \times (100\% + CPI_1) \times (100\% + CPI_2) \times (100\% + CPI_3)$.

6.76 In the formulas above:

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[166] CPI values for any given month are normally released by the Office for National Statistics around the 20th of the following month. For example, the CPI for September 2025 is likely to be released around the 20 October 2025.

[167] This is calculated as 1.5979p × 134.2 / 109.2 = 1.9637p. 134.2 is the value of the CPI in September 2024, expressed as an index with base year 2015 as 100; and 109.2 is the value of the CPI in December 2020 expressed as an index with base year 2015 as 100.

[168] We conducted sensitivity checks regarding the choice of the starting point of our cap calculations. If we choose September 2020 as the starting point, the result would be 1.5979 x 134.2 / 109.1 = 1.9681p where 109.1 is the value for the CPI measure in September 2020. If we chose September 2019 as the starting point, the result would be 1.5979 x 134.2 / 108.5 = 1.9763p, where 108.5 is the value for the CPI measure in September 2019. We are therefore satisfied that the choice of the starting point would not have a significant impact on the level of the cap.

a) "CPI_1" means the amount of the change in the Consumer Prices Index in the period of twelve months ending on 30 September 2025 expressed as a percentage (rounded to one decimal place);
b) "CPI_2" means the amount of the change in the Consumer Prices Index in the period of twelve months ending on 30 September 2026 expressed as a percentage (rounded to one decimal place);
c) "CPI_3" means the amount of the change in the Consumer Prices Index in the period of twelve months ending on 30 September 2027 expressed as a percentage (rounded to one decimal place).

6.77 For consistency with the approach for calculating the cap, we propose that the A2P SMS termination rate charged by terminating MCPs should be expressed as an amount in pence per A2P SMS rounded to two decimal places.

Summary of effects of proposed cap

6.78 In summary, the proposed level of the cap would address the risk, identified in Section 5, of terminating MCPs having the ability and incentive to set (and maintain) their prices for A2P SMS termination services at an excessively high level, thereby protecting business senders and message recipients. The setting of a cap for a three-year period would also provide greater certainty and stability to the industry, including Aggregators, and should support the effective functioning of the business messaging market.

Requirements supporting the charge control

6.79 In line with the charge control conditions currently applying to voice call termination,[169] we propose to facilitate the operation and enforcement of the proposed price cap by requiring terminating MCPs to provide us with any information reasonably requested and comply with any direction that we may make from time to time.[170]

Question 6: Do you agree with our proposal to set the price cap at a level based on an average of the four large MNOs' December 2020 prices, adjusted using CPI? If not, please explain why.

Impact assessment

6.80 The relevant duties in relation to the charge control on which we are consulting are summarised in Annex A6. As set out in Section 2 we expect our proposals to further the interests of consumers and citizens by setting regulation which is intended to:

a) protect consumer and citizen recipients, as well as business senders, of A2P SMS from the risk of adverse effects arising from price distortions (e.g. excessively high wholesale A2P SMS pricing), which we have identified in Section 5; and
b) support the effective functioning of the retail business messaging market by encouraging competition and innovation.

[169] See, for example, conditions M2.3-M2.4 at pages 132-133 of Annex 5 to Ofcom's Wholesale Voice Markets Review 2021–26 statement.
[170] Under section 45(10)(a) of the Act, Ofcom's power to set an SMP condition includes also the power to impose compliance with such directions as may be given from time to time by Ofcom.

6.81 It is difficult to calculate a precise monetary value on the impact of the proposed price cap as it will depend on many variables.

6.82 Below, we set out our initial estimate of the potential changes in revenues for the four large MNOs deriving from the proposed price cap (Option 2). In so doing, we have separately considered: (i) the reduction in revenues of capping only A2P SMS on-net termination, relative to current revenues, which would be consistent with both Option 1 and Option 2, and (ii) the change in net revenue flows of capping also A2P SMS termination via the interconnect route, which would apply only under Option 2.

6.83 As the proposed level of the price cap reflects our judgement of the prices that could prevail in a competitive environment, we consider that any additional revenues MCPs might have received, in the absence of the cap, by charging termination prices above the cap would stem from exploiting their market power. Therefore, changes in A2P SMS termination revenues related to the imposition of the cap should ultimately translate into benefits for senders of business messages and for message recipients.

6.84 Since we cannot be sure about the prices that would prevail in a competitive environment, assessing the impact of our proposed price cap involves balancing the opposing risks of setting it too low or too high. We have assessed the risk of this price cap being set too low (in the sense of setting it below cost and negatively impacting the incentives to invest) by estimating the scale of any foregone revenues deriving from the cap.

6.85 We have also considered above the risk of setting prices too high, allowing some exercise of SMP. In these specific circumstances, we consider that setting the price cap based on historical pricing would strike an appropriate balance between the opposing risks of setting it too high or too low, and it would also be a pragmatic approach to estimating the prices that would likely prevail in a competitive environment.

6.86 As we have previously noted, the potential difficulty for terminating MCPs of differentiating between P2P and A2P traffic through the interconnection channel could mean that the balance of payments between MCPs related to P2P traffic could be affected by the proposed price cap. This would be considered as an impact of our intervention, assuming that no measures are taken to try to bill A2P and P2P traffic through interconnection separately.

6.87 In this impact assessment, we now assess the possible effects of our proposed price cap, which we summarise as follows:

a) We estimate the reduction in revenues from the imposition of our proposed price cap of ca. 2p per message when compared to the current price levels of each of the four large MNOs. We find that the possible reduction of revenues would be approximately £30m per year or c. 6.5% of their current A2P SMS termination revenues, suggesting that the proposed cap is unlikely to have a substantial impact on the combined A2P SMS termination revenues of the four large MNOs.
b) We estimate the possible impact on the revenue flows from interconnected traffic between the four large MNOs, assuming that P2P and A2P traffic flowing through the interconnection channel as a result of the imposition of the cap is not billed separately and, therefore, the P2P traffic is priced at the same level as the A2P traffic. We find that the changes in flows of revenues would be relatively small, ranging from a reduction of £[✂] million to an increase of £[✂] million.
c) In relation to the impact on Aggregators and business senders/recipients of business messaging services, we consider that the proposed cap should translate into lower costs

(than would otherwise arise) and more stability for Aggregators, which, given the competitive nature of this market, should translate to lower prices (relative to prices in the absence of regulation) and better quality in their offerings to business senders. In turn, this should translate into benefits for message recipients by continuing to receive the messages that they find valuable.

d) In relation to the impact on the provision of other business messaging services, we consider that, as our proposed cap does not differ significantly from the prevailing prices of A2P SMS termination, it is unlikely to distort the market for the provision of other messaging services.

6.88 We consider that the proposed cap under Option 2 would leave MCPs no worse-off than under a competitive market. We expect that any potential impact related to MCPs pricing P2P SMS termination at the same level as A2P SMS termination (i.e., without exceeding the proposed price cap for A2P SMS termination) would be relatively small if they decide not to implement any measures to bill A2P and P2P through interconnection separately. On the other hand, we consider that positive effects would ultimately arise from Option 2 for business senders and consumer/citizens recipients of A2P SMS, from restricting the exercise of market power across all of the wholesale market (rather than restricting its scope to on-net termination, as with Option 1).

6.89 We set out our reasoning summarised above in more detail below.

Effect on MCPs of capping A2P SMS on-net termination only

6.90 In this sub-section we consider the potential revenue effect arising from the introduction of a cap on the level of A2P SMS termination rates for the on-net route only. We have assumed that we would also impose a network access condition on terminating MCPs to supplement the price cap if we were to adopt Option 1.

6.91 We anticipate that the most substantive impact on MCPs of capping A2P SMS on-net termination rates relative to a 'do nothing' approach could be to reduce total aggregate termination revenues or reduce their potential future growth during the review period.

6.92 As we described in Section 3, the volumes of A2P SMS termination have not been sensitive to recent price increases. However, in the absence of a precise estimate of the price elasticity of demand and the path of future price increases in the absence of a price cap, it is difficult to accurately predict the impact that introducing a price cap would have on termination volumes and therefore termination revenues.

6.93 To obtain an estimate of the potential effect on termination revenues based on current conditions, we have calculated the A2P SMS termination revenues for the four large MNOs under two pricing scenarios: (i) 2p per message price cap, which is close to our proposed price cap in September 2024 prices, for A2P SMS on-net termination only and (ii) the most recent A2P SMS on-net termination prices charged by these four MNOs. For both revenue calculations we have used the A2P SMS termination volumes for each of these MNOs in the financial year 2023/24 (which include also a small proportion of off-net traffic). Table 6.1 below summarises our results.[171]

[171] The A2P SMS volumes shown in the table include a small proportion of off-net traffic (between [✂]% and [✂]% according to MNOs' clarifications to their responses to our statutory information requests). As these figures are estimates, it is not possible to accurately calculate the proportion of off-net traffic in these volumes

6.94 Our analysis suggests that, if volumes of A2P SMS termination remained stable at their 2023/24 levels, then introducing the 2p cap per message for on-net traffic only would reduce A2P SMS termination revenues for the four large MNOs jointly by approximately £30mn per year. This reduction represents c.6.5% of their current A2P SMS termination revenues, which we have estimated at £443.3mn. Therefore, under our volume assumptions, we estimate these revenues would remain at broadly similar levels following the introduction of a cap on A2P SMS on-net termination rates.[172]

Table 6.1: Estimate of the potential effect of capping A2P SMS on-net termination rates on A2P SMS termination revenues

Scenario for revenue calculations	EE		Three		VMO2		Vodafone		Total
	Rate, £p	Revenue, £mn	Rate, £p	Revenue, £mn	Rate, £p	Revenue, £mn	Rate, £p	Revenue, £mn	Revenue, £mn
2023/24 volumes, 2024Q2 prices	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	**443.3**
2023/24 volumes, 2p price cap	2.00	[✂]	2.00	[✂]	2.00	[✂]	2.00	[✂]	**414.5**

Source: MNOs' responses to the RFI, Ofcom's calculations.

6.95 While we do not have information on the other MCPs we would expect that the revenue effect would similarly be a small percentage of any terminating revenues that they may earn at present.

6.96 The data currently available to us does not allow us to quantify the forgone revenues for the four large MNOs if we cap the price of A2P SMS termination via the interconnect route (in addition to capping on-net termination). This is because they told us that, at the moment, they cannot reliably distinguish between A2P and P2P SMS traffic. However, we do anticipate that there would likely continue to be some A2P SMS traffic using the off-net route, and hence this would be within the scope of the price cap for Option 2 (unlike Option 1).

and, therefore, the precise figure for on-net traffic, as well as the accurate share of A2P SMS revenues attributed to that traffic. However, to assess whether this uncertainty has a material impact on our results we tested the sensitivity of the results to the inclusion of these off-net volumes, and repeated the calculations excluding off-net traffic using the estimates provided to us (this calculation, however, relies on a strong assumption that these volumes were priced at the average price level). The impact of the 2p price cap under these alternative calculations is total revenue reduction of £28.3mn per year (compared to £28.7mn reduction shown in the table).

[172] Any second-order impacts of capping only A2P SMS on-net termination rates (under Option 1) arising from some traffic switching from the unregulated (and hence likely more expensive) off-net route to the capped direct route would be difficult to capture in our analysis and therefore we have not attempted to estimate them. Estimates of A2P SMS traffic using interconnect routes as a share of the total SMS traffic using these routes provided by the four large MNOs ranged from less than [✂]% to ca. [✂]%.

Impact on MCPs' interconnection revenue flows of also capping the A2P SMS termination via the interconnect route

6.97 We have also considered the potential impact on the balance of revenue flows between the four large MNOs for their SMS traffic, including also the P2P SMS traffic. Below, we describe our calculations.

6.98 As we have explained above, terminating MCPs receive both A2P SMS traffic (forwarded by interconnecting MCPs) and P2P SMS traffic (generated on other MCPs' network) via the interconnect channel. Currently, terminating MCPs say they cannot reliably distinguish between A2P and P2P SMS traffic and the same termination rates apply to both.

6.99 If terminating MCPs continue to price in this way (either because this is their preferred approach or because there is not an easy way for them to distinguish A2P and P2P SMS traffic and charge them differently) the proposed cap for A2P SMS termination via the interconnect route would also apply to P2P traffic. This would be an unintended consequence of our proposed regulatory intervention as we are not seeking to regulate P2P SMS termination rates. It may, in turn, have an impact on the balance of revenues between MCPs for the termination of P2P SMS traffic as some MCPs are net senders of P2P SMS traffic while others are net receivers.

6.100 We have therefore sought to estimate the impact which Option 2 may have on the balance of revenue flows for the SMS traffic between the four large MNOs. Our estimates are intended to provide an approximation of the order of magnitude of the potential impact based on current conditions, rather than a precise account. We have calculated the MNOs' net revenues from SMS interconnect traffic under two pricing scenarios: (1) using the most recent interconnect rates (as of 2024 Q2), and (2) using a price cap of 2p. For both calculations we have used the four large MNOs' SMS interconnection volumes for the financial year 2023/24.[173] Table 6.2 below summarises our results.

Table 6.2: Calculation of potential impact of the price cap on balance of revenues from SMS interconnect traffic (£mn)

Scenario	EE	VMO2	Three	Vodafone
Revenues calculated with 2023/24 volumes and 2024 Q2 prices	[✂]	[✂]	[✂]	[✂]
Revenues calculated with 2023/24 volumes and 2p price cap.	[✂]	[✂]	[✂]	[✂]
Difference	[✂]	[✂]	[✂]	[✂]

Source: MNO's responses to RFI; Ofcom's calculations.

6.101 Our estimates suggest that both [✂] and [✂] could see a reduction in their net payments to the other MNOs under the cap (by £[✂] and £[✂]per year, respectively). [✂] would see a reduction in its net revenue by £[✂] per year and [✂] by £[✂]. These calculations take 2023/24 volumes as the starting point. We recognise that actual volumes, and therefore any traffic imbalance between the MNOs, may differ from the ones used here.

[173] These calculations are based on the estimates of interconnected SMS traffic that was provided by the MNOs. As discussed in footnote 127, MNOs explained that they were not able to fully distinguish between A2P and P2P traffic using interconnect routes and therefore caveated that the estimates provided are likely to include both A2P and P2P SMS traffic.

However, these calculations provide a reasonable estimate of the order of magnitude of the potential revenue impact under the assumptions listed above.

6.102 We note that if it were possible for MCPs to bill separately for A2P and P2P traffic, we anticipate that the impact of the cap on the balance of payments between MNOs for the SMS traffic sent and received via the interconnect route would be even smaller – possibly zero if there were a way to perfectly separate the traffic for billing purposes.

6.103 Therefore, we have further considered whether there may be ways for MCPs to minimise this impact if doing so was important to them. Our initial view is that a terminating MCP that wishes to bill for A2P and P2P traffic separately could potentially set such contractual terms with interconnecting MCPs, on the basis that an interconnecting MCP should be able to distinguish the volumes because A2P traffic – unlike P2P traffic - will have been received by the interconnecting MCP from Aggregators. We also understand that there are some technical means to help distinguish some A2P traffic from P2P traffic (e.g. traffic with alphanumeric headers). We would welcome input from stakeholders on the practicality of such arrangements.

6.104 In this Impact Assessment we have, however, considered the possibility that some terminating MCPs may find it difficult to distinguish between A2P and P2P traffic and they may conclude that the only practical approach is for them to set a single price for terminating SMS traffic received on the interconnect route at the A2P termination regulated level, even if this is not their preferred approach. As outlined above, we consider that any possible financial impact is likely to be limited, as only a fraction of P2P traffic actually generates payments from one MCP to another (i.e. the difference in the balance of traffic).

6.105 It is highly unlikely that if any such impact were to materialise, it would have a negative effect on the incentives of MCPs to invest or have any negative knock-on effects on consumers. Furthermore, as discussed below, any such impact is likely to be small compared to the possible benefits to business messaging senders and, ultimately, to message recipients.

Impact on Aggregators and business senders/message recipients

6.106 As previously discussed, A2P SMS termination costs make up the majority of Aggregators' costs. Aggregators told us that in recent years they have generally had no choice but to increase their own prices when faced with termination price increases (in some cases, due to mismatch in contract lengths, or when dealing with particularly price sensitive customers, some Aggregators have had to absorb some of the price increases, on a temporary or ongoing basis).

6.107 Taking this into consideration, alongside evidence of effective competition between Aggregators, we consider that the introduction of a price cap and consequential reduction in A2P SMS termination rates for some MCPs would lead to downward pressure on the retail prices of business messaging services (with potentially some exceptions in cases when the original price increase was absorbed by the Aggregator).

6.108 We saw some evidence from Aggregators' responses to our information requests, as well as from our qualitative survey, that some users of business messaging services have reduced their volumes of A2P SMS. A small number of businesses may have completely switched

away from using A2P SMS services following price increases (although not on the scale that would constrain price increases). An impact of the price cap on termination rates could therefore be the retention of some A2P SMS that might have been lost if prices rose further above competitive levels, yielding benefits to business senders and consumer/citizen recipients.

6.109 Another positive impact on Aggregators would be greater clarity regarding the timing and magnitude of any future A2P SMS termination price increases over the review period. This would mitigate the challenges faced by Aggregators in pricing their services in recent years due to unpredictable nature of price increases for A2P SMS termination with short notification periods.

6.110 In turn, this could allow them, for example, to offer contracts with a longer duration to those customers who desire such agreements. Therefore, capped termination rates are likely to encourage greater price stability at the retail level, which in turn should support the effective functioning of competition in the business messaging market.

6.111 As a result, business senders could benefit from lower prices for A2P SMS messaging services, at least relative to prices in the absence of a price cap on termination. They may also potentially experience benefit from increased quality of service due to an increased offering of services or packages, such as longer-term contracts for those who seek greater certainty when procuring these services. In turn, improved conditions to access these services may facilitate increased investment, efficiency and innovation, which will have a knock-on effect on growth.

6.112 Lower prices should also reduce the likelihood of business messages senders curtailing the number of messages they send as a result of cost considerations, which will benefit message recipients who will continue to receive the important communications via A2P SMS that they value.

Capping also the interconnect route is likely to have a greater positive impact on Aggregators and business senders/message recipients

6.113 We consider that the positive impacts on Aggregators and business senders/message recipients described above are likely to be greater if we cap A2P SMS termination rates irrespective of the route of A2P SMS traffic (Option 2), relative to capping only A2P SMS on-net termination rates (Option 1). This is because, as set out above, we would expect that a small share of A2P traffic would continue to go via the off-net route and, as the termination of this traffic would not be within the scope of the price cap in Option 1, it could be priced at a higher level. This could reduce some of the benefits to Aggregators and business senders/message recipients of the price cap that would apply under Option 2. In our view, Option 2 would provide more regulatory certainty (relative to Option 1) about the pricing of A2P SMS termination going via that route. In addition, the continuing viability of this route should also offer greater resilience.

Impact on the provision of other business messaging services

6.114 Our proposed approach to setting the level of the price cap should mean it does not result in a significantly lower price for retail A2P SMS messaging services. While it is difficult to make like-for-like comparisons, our proposed price cap for A2P SMS termination is within the range of the current price of other business messaging services (in particular,

WhatsApp's business messaging prices for its direct customers are currently between 1.59p and 3.82p, depending on the type of message).[174]

6.115 While it is difficult to anticipate the competitive price for other messaging services during the review period, setting the cap at the proposed level should avoid the risk of setting prices too low and the potential unintended consequence of creating a market distortion, thus hindering the potential growth of other services which may contribute to competition and innovation in the broader retail business messaging market in the future.

Question 7: Do you agree with our impact assessment? If not, please explain why.

Equality Impact Assessment

6.116 We have also carried out an Equality Impact Assessment, as outlined in Section 2 (paragraphs 2.36-2.37). In summary, we do not consider that our proposals will adversely affect any specific groups of persons. Our proposals could have a particularly positive impact on groups of people who own standard mobile phones that are not smartphones, as well as people who are less likely to have access to Wi-Fi at home, when compared to the general population, thereby helping to advance equality of opportunity.

Question 8: Do you agree with our assessment of the potential impacts on specific groups of persons, as set out in paragraphs 2.36-2.37? If not, please explain why.

Timetable for implementation

6.117 As set out in Section 5, we have based our analysis and proposals on our expectation of a three-year market review period. We are planning for the market review period to start on 1 January 2026 and hence the charge control would remain in place over the same period (i.e., until 31 December 2028). A three-year review period would be consistent with the period set out in section 84A(7) of the Act, which is to review markets at least every 5 years, extendable up to 6 years in exceptional cases.

6.118 We have also considered the time period within which we expect our proposed charge control to be implemented. In the event that we decide to implement our preferred remedy (Option 2 above), we propose an implementation period of three months from publication of a statement to the start date of the charge control. As set out above, this would give terminating MCPs more than two months' notice of the CPI value for the inflation adjustment.

6.119 Therefore, if we were to publish our final statement by the end of Q2 2025/26 (i.e. 30 September 2025), we expect that the proposed cap would apply from 1 January 2026. If the statement is published on a later date, we would adjust the commencement date of the market review period accordingly.

6.120 We understand that, before imposing the cap, the relevant entities involved in the value chain will need to be informed of any changes to the price of the service they buy. We should therefore allow a reasonable period for such communications to be transmitted and

[174] See Table 3.1.

responded to, in addition to any consequential follow-up action which would be reasonably necessary, such as updating any relevant marketing materials and billing.

6.121 Taking these factors into account, and noting that terminating MCPs have been able to implement significant price changes giving relatively short notice to Aggregators, our initial view is that an implementation period of three (calendar) months – including at least two months' notice of the CPI value for the inflation adjustment – should give MCPs sufficient time to make the necessary changes to comply with the proposed conditions.

Question 9: Do you agree with our proposal for a three-month implementation period following the publication of our final Statement? If not, please explain why.

Legal instrument (Annex A5)

6.122 A draft of the legal instrument for implementing our proposed charge control (i.e., Option 2) is set out in Annex A5.

Legal tests

6.123 Below we set out our considerations for how our proposals, if implemented, would meet the relevant legal tests under the Act (which are described in more detail in Annex A6).

Three-criteria tests under section 79(2B)

6.124 We have set out in Section 5 above why we consider that the three-criteria test set out in section 79(2B) of the Act are met.

Section 47 tests for imposing SMP conditions

6.125 For the reasons set out below, we are satisfied that the section 47 tests in the Act for imposing an SMP condition are met in relation to our proposed charge control.

Objective justification

6.126 Our provisional market analysis has found that there is a risk that operators to whom we have allocated mobile numbers (the "terminating MCPs") have the ability and incentive to fix and maintain prices for the termination of A2P SMS at an excessively high level, so as to have adverse consequences for end users. In the absence of any charge control, this would allow them potentially to set charges unilaterally and excessively, causing adverse impacts on both competition and on consumer choice, price, quality, and value for money. Our proposed charge control has been designed to address this concern while allowing the terminating MCPs to recover their efficiently-incurred costs, including a reasonable return on investment.

Not such as to discriminate unduly

6.127 We are satisfied that our proposed charge control would not discriminate unduly against a particular person or particular persons because Aggregators or MCPs would be able to access the relevant termination services (i.e., on-net termination for Aggregators and off-net termination for other MCPs) at a rate not exceeding the charge levels set by the proposed condition. In addition, we do not consider that the proposed control would discriminate unduly against the identified terminating MCPs as it would be imposed on all

holders of a mobile number allocation where they are terminating A2P SMS traffic, or planning to do so within the review period.

Proportionality

6.128 We consider that the proposed charge control on which we are consulting would be proportionate to what this remedy is intended to achieve. In particular, we consider that this charge control would be:

- effective to achieve our aim. As set out above, we consider that Option 2 is the only option which would be effective in addressing our concerns about the risk of terminating MCPs' ability and incentive to fix and maintain prices for the termination of A2P SMS at an excessively high level;
- no more onerous than is required to achieve that aim. We note, in particular, that the proposed remedy would be limited to a charge control for A2P SMS termination; and
- it would not produce adverse effects which would be disproportionate to our aim. As noted above, even if there is a risk of the proposed cap for A2P traffic using the interconnect route affecting also the price charged for P2P traffic on the same route, we anticipate that the impact on the balance of payments between MCPs for the SMS traffic sent and received via the interconnect route would be small.

Transparency

6.129 We consider that the proposed charge control is transparent in relation to what is intended to be achieved. The text of the proposed draft SMP conditions that would implement such charge control is published in Annex A5 for consultation and the operation of those SMP conditions is aided by our explanations in this document. Our final statement will set out our analysis of responses to this consultation and the basis for any final decision that we take.

Section 88 tests for conditions about network access pricing

6.130 In our view, our proposed charge control satisfies the tests set out in section 88 of the Act.[175] As discussed above, in light of the findings of our market analysis that the terminating MCPs have SMP in the termination of A2P SMS to the mobile numbers allocated to them (except for ported-out numbers) and to their ported-in numbers, we are of the view that there is a relevant risk of adverse effects arising from price distortion by these terminating MCPs due to their ability and incentive to fix and maintain their prices for A2P SMS termination services at an excessively high level so as to have adverse consequences for end users of public electronic communications services. Further, for the reasons set out below, we also consider that our proposed charge control is appropriate for the purposes of:

a) promoting efficiency, since the cap would be set at a level that should allow terminating MCPs to recover costs while continuing to make the service accessible to those who rely on it.
b) promoting sustainable competition, since the cap would be set at a reasonable estimate of what the competitive level would be and is unlikely to undermine/undercut the competitive position of other business messaging services (e.g. WhatsApp for Business).

[175] See para 1.18 above and the regulatory framework annex for more information about the section 88 tests.

We also note that the proposed cap would set a ceiling on prices but would not prevent terminating MCPs from setting lower prices, if they so wish; and

c) conferring the greatest possible benefits on the end-users of public electronic communications services, since the cap would ensure that businesses and public bodies who send A2P SMS continue to have access to this form of business messaging at a reasonable price and recipients continue to receive valued messages, while being set at a level that ensures that the SMS platform continues to be a reliable and trustworthy method of delivering these sorts of communications. In considering this, we have also had regard to the long-term interests of end-users in the use of next-generation networks. In our view, while the proposed charge control would not directly affect these types of networks, it would not constrain MCPs' incentives to invest in them and it is unlikely to undermine/undercut the competitive position of other business messaging services using online networks/services, such as WhatsApp for Business.

6.131 We have also considered whether our proposed charge control is appropriate for the purpose of promoting the availability and use of new and enhanced networks.[176] As set out above, we note that the proposed charge control would not constrain MCPs' incentives to invest in these types of networks and it is unlikely to undermine/undercut the competitive position of other business messaging services using online networks/services.

6.132 In proposing to impose our proposed charge control, we have also taken account of the extent of the investment in the matters to which the condition relates of the person to whom it is to apply, and the benefits of predictable and stable wholesale prices in ensuring (i) efficient market entry; and (ii) sufficient incentives for all undertakings to bring into operation new and enhanced networks.[177]

[176] Section 88(1)(b)(iv) of the Act.
[177] Section 88(2) of the Act.

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 Tuesday 8 April 2025.

A1.2 You can download a response form from https://www.ofcom.org.uk/phones-and-broadband/mobile-phones/a2p-sms-termination-market/. 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 a2psmsTerminationReview@ofcom.org.uk, as an attachment in Microsoft Word format, together with the cover sheet. This email address is for this consultation only and will not be valid after 18 April 2025.

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

A2P SMS Termination Review team
Ofcom
Riverside House
2A Southwark Bridge Road
London SE1 9HA

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 of a response submitted to us by email.

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 X. 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 by email to a2psmsTerminationReview@ofcom.org.uk.

Confidentiality

A1.11 Consultations are more effective if we publish the responses before the consultation period closes. 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 responses on the Ofcom website at regular intervals during and after the consultation period.

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 To fulfil our pre-disclosure duty, we may share a copy of your response with the relevant government department before we publish it on our website.

A1.15 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 in our Terms of Use.

Next steps

A1.16 Following this consultation period, Ofcom plans to publish a statement in Q2 2025/26.

A1.17 If you wish, you can register to receive mail updates alerting you to new Ofcom publications.

Ofcom's consultation processes

A1.18 Ofcom aims to make responding to a consultation as easy as possible. For more information, please see our consultation principles in Annex x.

A1.19 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.

A1.20 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

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

During the consultation

2. We will be clear about whom we are consulting, why, on what questions and for how long.
3. We will make the consultation document as short and simple as possible, with an overview of no more than two pages. We will try to make it as easy as possible for people to give us a written response.
4. When setting the length of the consultation period, we will consider the nature of our proposals and their potential impact. We will always make clear the closing date for responses.
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.
6. If we are not able to follow any of these principles, we will explain why.

After the consultation

7. We think it is important that everyone who is interested in an issue can see other people's views, so we usually publish the responses on our website at regular intervals during and after the consultation period. 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 you selected 'Part of the response', please specify 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)?

Yes ☐ No ☐

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 aims to publish responses at regular intervals during and after the consultation period. 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

Please tell us how you came across about this consultation .

- ☐ Email from Ofcom
- ☐ Saw it on social media
- ☐ Found it on Ofcom's website
- ☐ Found it on another website
- ☐ Heard about it on TV or radio
- ☐ Read about it in a newspaper or magazine
- ☐ Heard about it at an event
- ☐ Somebody told me or shared it with me
- ☐ Other (please specify)

Question 1: Do you agree with our provisional conclusion regarding market definition? Please provide reasons and evidence in support of your views.

Question 2: Do you agree with our provisional conclusion regarding SMP? Please provide reasons and evidence in support of your views.

Question 3: Do you agree with our provisional conclusion regarding the three-criteria test set out in section 79(2B) of the Act? Please provide reasons and evidence in support of your views.

Question 4: Do you agree with our provisional view that setting a price cap on A2P SMS termination rates (based on historical pricing with indexation) would be the most appropriate and proportionate response for addressing our competition concerns arising from SMP (identified in section 5)? If not, please explain why.

Question 5: Do you agree with our provisional view that Option 2 would be effective in addressing the risk (identified in Section 5) that terminating MCPs have the ability and incentive to set and maintain prices for the termination of A2P SMS at an excessively high level, while Options 1 and 3 would not fully address that risk? If not, please explain why.

Question 6: Do you agree with our proposal to set the price cap at a level based on an average of the four large MNOs' December 2020 prices, adjusted using CPI? If not, please explain why.

Question 7: Do you agree with our impact assessment? If not, please explain why.

Question 8: Do you agree with our assessment of the potential impacts on specific groups of persons, as set out in paragraphs 2.36-2.37? If not, please explain why.

Question 9: Do you agree with our proposal for a three-month implementation period following the publication of our final Statement? If not, please explain why.

A5. Proposed SMP condition

Draft legal instrument

Part I – Notification of proposals under sections 48A(3) and 80A(3) of the Communications Act 2003

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

Background

A5.1 Ofcom is today publishing a consultation document entitled "Business messaging – Review of the A2P SMS termination market" setting out Ofcom's proposals to identify markets, make market power determinations and set a SMP condition for the three-year period from 1 January 2026[178] to 31 December 2028.

Proposals for service market identifications and market power determinations

A5.2 Ofcom is proposing to identify fifty one separate markets (each a "**wholesale A2P SMS termination market**" or "**relevant market**") in the United Kingdom in relation to the wholesale A2P SMS termination services provided by each Relevant Provider to any third party (including Aggregators and other Communications Providers) for the termination of A2P SMS to the Mobile Numbers allocated by Ofcom to the Relevant Provider (excluding any Ported-Out Number) and to any Ported-In Number, in the area that it serves.[179]

A5.3 Ofcom is proposing to make a market power determination that each of the persons set out in Schedule 1 to this notification (each "**Relevant Provider**") has significant market power in relation to the relevant market in which that provider operates.

A5.4 As specified in Schedule 1, for each of the persons identified under that Schedule, the SMP designation holds with respect to the registered company identified and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 1159 of the Companies Act 2006, in so far as they operate as Communications Providers in the relevant market.

Proposals to set a SMP services condition

A5.5 Ofcom is proposing to set the SMP condition set out in Schedule 2 to this notification on each person listed in Schedule 1. Ofcom is proposing that that SMP condition shall apply, in the case of each person on whom it is set, in respect of the relevant market in which that person operates.

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[178] For illustrative purposes, we have drafted this SMP condition on the provisional assumption that we will publish a final statement in Q2 2025/2026 and that the proposed charge control will come into force on 1 January 2026.

[179] We note that where an Aggregator is not directly connected to the Relevant Provider or is not using its direct connection to the Relevant Provider, the termination service which is currently made available by Relevant Providers may not be A2P-specific.

A5.6 Unless otherwise stated in Schedule 2 to this notification, the SMP condition that Ofcom is proposing shall take effect from the date of the notification under sections 48(1) and 79(4) of the Act adopting the proposals set out in this notification and shall have effect until the publication of a notification under section 48(1) of the Act revoking such conditions.

A5.7 The effect of, and Ofcom's reasons for making, the proposals referred to above are contained in the consultation accompanying this notification.

Ofcom's duties and legal tests

A5.8 In accordance with section 79 of the Act, in identifying and analysing the markets referred to in this Notification, and in considering whether to make the corresponding proposals set out in this Notification, Ofcom has had regard to the EECC Materials relating to market identification, market analysis and the determination of what constitutes significant market power that appear to Ofcom to be relevant to this market review.

A5.9 Ofcom considers that the proposed SMP condition set out in Schedule 2 to this Notification complies with the requirements of sections 45 to 47, 87 and 88 of the Act, as appropriate and relevant to such SMP condition.

A5.10 In making all of the proposals referred to in this Notification, Ofcom has considered and acted in accordance with its general duties set out in section 3 of the Act and the six requirements in section 4 of the Act.

A5.11 Ofcom has had regard to the Statement of Strategic Priorities. Ofcom has also considered the importance for the promotion of economic growth of carrying out this market review in a way which ensures that regulatory action is taken only when it is needed, and any action taken is proportionate, having had regard to the "Growth Duty: Statutory Guidance".

Making representations

A5.12 Representations may be made to Ofcom about any of the proposals set out in this Notification and in the accompanying consultation document by no later than 5pm on 8 April 2025.

Notification to the Secretary of State

A5.13 Copies of this Notification and the Consultation have been sent to the Secretary of State in accordance with sections 48C(1) and 81(1) of the Act.

Interpretation

A5.14 For the purpose of interpreting this notification (which for the avoidance of doubt includes the Schedules):

a) except in so far as the context otherwise requires or as otherwise defined in this notification, words or expressions used shall have the meaning assigned to them below, and otherwise any word or expression has the same meaning as it has in the Act;
b) headings and titles shall be disregarded;
c) expressions cognate with those referred to in this notification shall be construed accordingly; and
d) the Interpretation Act 1978 (c. 30) shall apply as if this notification were an Act of Parliament.

A5.15 In this Notification:

a) "**Aggregator**" means a person who acquires packages of A2P SMS from Communications Providers and offers them to end user (enterprise or public sector) customers either directly or indirectly via other Aggregators on a wholesale basis.

b) "**A2P SMS**" (or "Application to Person SMS") means a SMS which is sent from a software application.

c) "**Act**" means the Communications Act 2003.

d) "**Communications Provider**" has the same meaning as in section 405(1) of the Act.

e) "**EECC Materials**" has the same meaning as in section 79(6A) of the Act.

f) "**Mobile Number**" means a UK telephone number that begins with 071, 072, 073, 074, 075, 077, 078 or 079.

g) "**Ofcom**" means the Office of Communications as established pursuant to section 1(1) of the Office of Communications Act 2002.

h) "**Ported-In Number**", in relation to each Relevant Provider, means any Mobile Number not allocated by Ofcom to that provider which has been retained by one of its current subscribers (through the number portability process) when switching away from another Communications Provider.

i) "**Ported-Out Number**" in relation to each Relevant Provider, means any Mobile Number allocated by Ofcom to that provider which has been retained by a former subscriber of that provider who is no longer one of its current subscribers (through the number portability process) when switching to another Communications Provider.

j) "**Relevant Provider**" means each of the persons named in Schedule 1 to this Notification.

k) "**SMS**" (or "**Short Message Service**") means a text message composed principally of letters or numbers which is sent to a Mobile Number (allocated in accordance with the National Telephone Numbering Plan) on a mobile network.

l) "**Statement of Strategic Priorities**" means the Statement of Strategic Priorities for telecommunications, the management of radio spectrum, and postal services designated by the Secretary of State for Digital, Culture, Media and Sport for the purposes of section 2A of the Communications Act 2003 on 29 October 2019.

Signed

Brian Potterill

Policy Director, Networks & Communications

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

28 January 2025

Schedule 1 – Provisional list of Relevant Providers

For each of the persons identified below, the SMP designation holds with respect to the registered company identified and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 1159 of the Companies Act 2006 (or which would fall within that definition were it applied), in so far as they operate as Communications Providers in the relevant market.

1. (AQ) Limited, whose registered company number is 03663860 and registered address is 13-15 Hunslet Road, Leeds, West Yorkshire, LS10 1JQ, United Kingdom.
2. 08Direct Limited, whose registered company number is 06428331 and registered address is Mazhar House 48 Bradford Road, Stanningley, Leeds, West Yorkshire, LS28 6DD, United Kingdom.
3. Ace Call Ltd, whose registered company number is 06729339 and registered address is 11 Hatton Garden, Liverpool, Merseyside, L3 2HA, United Kingdom.
4. Andrews & Arnold Ltd, whose registered company number is 03342760 and registered address is Enterprise Court, Downmill Road, Bracknell, Berkshire, RG12 1QS, United Kingdom.
5. Anywhere Sim Limited, whose registered company number is 09615065 and registered address is Unit 7 Twin Brook Business Park, Twin Brook Road, Clitheroe, Lancashire, England, BB7 1QX, United Kingdom.
6. AQL Wholesale Limited, whose registered company number is 05134355 and registered address is 11-15 Hunslet Road, Leeds, LS10 1JQ, United Kingdom.
7. EE Limited, whose registered company number is 02382161 and registered address is 1 Braham Street, London, E1 8EE, United Kingdom.
8. Circles MVNE International B.V., whose registered company number is 86866486 and registered address is P.J. Oudweg 4, 1314CH Almere, Netherlands.
9. Citrus Telecommunications Ltd, whose registered company number is 03517870 and registered address is Fryern House, 125 Winchester Road, Chandlers Ford, Hampshire, England, SO53 2DR, United Kingdom.
10. Compatel Limited, whose registered company number is 07456831 and registered address is First Floor, 85 Great Portland Street, London, W1W 7LT, United Kingdom.
11. Core Communication Services Limited, whose registered company number is 05467282 and registered address is 956 Buckingham Avenue, Slough, England, SL1 4NL, United Kingdom.
12. Core Telecom Limited, whose registered company number is 05332008 and registered address is Mazhar House 48 Bradford Road, Stanningley, Leeds, West Yorkshire, LS28 6DD, United Kingdom.

13. FleXtel Limited, whose registered company number is 02772380 and registered address is Unit 142 Imperial Court, Exchange Street East, Liverpool, England, L2 3AB, United Kingdom.
14. Gamma Telecom Ltd, whose registered company number is 04340834 and registered address is The Scalpel, 18th Floor, 52 Lime Street, London, EC3M 7AF, United Kingdom.
15. Global Reach Networks Limited, whose registered company number is 04349826 and registered address is C/O Partners In Enterprise Ltd Ground & Lower Ground Floor, 9 St Georges Place, Brighton, BN1 4GB, United Kingdom.
16. Hutchison 3G UK Limited, whose registered company number is 03885486 and registered address is 450 Longwater Avenue, Green Park, Reading, Berkshire, England, RG2 6GF, United Kingdom.
17. Icron Network Limited, whose registered company number is 05445235 and registered address is Level18, 40 Bank Street, London, England, E14 5NR, United Kingdom.
18. IV Response Limited, whose registered company number is 04318927 and registered address is 57-61 Mortimer Street, London, W1W 8HS, United Kingdom.
19. Lebara Mobile Limited, whose registered company number is 06184980 and registered address is 7th Floor, Import Building, 2 Clove Crescent, London, England, E14 2BE, United Kingdom.
20. Lycamobile UK Limited, whose registered company number is 05903820 and registered address is 3rd Floor Walbrook Building, 195 Marsh Wall, London, E14 9SG, United Kingdom.
21. Mars Communications Limited, whose registered company number is 06478834 and registered address is 1st Floor, 107 George Lane, London, England, E18 1AN, United Kingdom.
22. Mass Response Service GmbH, whose registered company number is 219470a and registered address is Donau-City-Straße 1/7 45 Stock, 1220 Wien, Austria.
23. Mobiweb Telecom Limited, whose registered company number is 08851141 and registered address is Third Floor, 207 Regent Street, London, W1B 3HH, United Kingdom.
24. Premium Routing GmbH, whose registered company number is CHE-113.847.561 and registered address is Steinackerstrasse 2, 8302 Kloten, Switzerland.
25. Resilient Limited, whose registered company number is 01403177 and registered address is 25/27 Shaftesbury Avenue, London, W1D 7EQ, United Kingdom.
26. Sark Telecom B.V., whose registered company number is 30194024 and registered address is Lichtboei 157, 9732JH Groningen, Netherlands.
27. Secretary of State for the Home Office, whose address is 2 Marsham Street, London, SW1P 4DF, United Kingdom.
28. Sky UK Limited, whose registered company number is 02906991 and registered address is Grant Way, Isleworth, Middlesex, TW7 5QD, United Kingdom.
29. Sound Advertising Limited, whose registered company number is 03218628 and registered address is Aston House, Cornwall Avenue, London, N3 1LF, United Kingdom.
30. Spacetel UK Limited, whose registered company number is 03036383 and registered address is 790 Uxbridge Road, Hayes, Middlesex, UB4 0RS, United Kingdom.

31. Spitfire Network Services Limited, whose registered company number is 02657590 and registered address is 1st Floor Gallery Court, 28 Arcadia Avenue, London, N3 2FG, United Kingdom.

32. Stour Marine Limited, whose registered company number is 05914603 and registered address is Good Easter House, Good Easter, Chelmsford, Essex, CM1 4RS, United Kingdom.

33. Swiftnet Limited, whose registered company number is 02469394 and registered address is Olympia House, Armitage Road, London, England, NW11 8RQ, United Kingdom.

34. Synectiv Limited, whose registered company number is 03706138 and registered address is 2 Spring Villa Park, Spring Villa Road, Edgware, Middlesex, HA8 7EB, United Kingdom.

35. Tango Networks UK Ltd., whose registered company number is 07051067 and registered address is 1200 Century Way, Thorpe Park Business Park 1200 Century Way, Thorpe Park Business Park, Leeds, England, LS15 8ZA, United Kingdom.

36. Tata Communications (UK) Limited, whose registered company number is 05272339 and registered address is 30 St Mary Axe, Level 34, London, EC3A 8EP, United Kingdom.

37. Telecom2 Limited, whose registered company number is 06926334 and registered address is Cotswold Hse, 219 Marsh Wall, London, England, E14 9FJ, United Kingdom.

38. Telefonica UK Limited, whose registered company number is 01743099 and registered address is 500 Brook Drive, Reading, RG2 6UU, United Kingdom.

39. Telesign Mobile Limited, whose registered company number is 04546322 and registered address is 2 New Bailey, 6 Stanley Street, Salford, Greater Manchester, M3 5GS, United Kingdom.

40. Telet Research (N.I.) Limited, whose registered company number is NI642439 and registered address is Forsyth House, Cromac Square, Belfast, Antrim, Northern Ireland, BT2 8LA, United Kingdom.

41. Telna Inc., whose registered company number is 833021918 and registered address is Toronto, Ontario, Canada

42. TGL Services (UK) Ltd, whose registered company number is 09293520 and registered address is 2nd Floor Partnership House, Carlisle Place, London, England, SW1P 1BX, United Kingdom.

43. Tismi B.V., whose registered company number is 32081827 and registered address is De Corridor 5, Breukelen, Netherlands

44. TP Global Operations Limited, whose registered company number is 14109189 and registered address is 109-111 Farringdon Road, London, England, United Kingdom.

45. Vectone Mobile Limited, whose registered company number is 04553934 and registered address is Level18, 40 Bank Street, London, England, E14 5NR, United Kingdom.

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

47. Voicetec Systems Limited, whose registered company number is 03948745 and registered address is 790 Uxbridge Road, Hayes, England, UB4 0RS, United Kingdom.

48. Voxbone SA, whose registered company number is 0478.928.788 and registered address is Louizalaan 231, 1050 Elsene, Belgium.

49. Wave Mobile Ltd, whose registered company number is 04780898 and registered address is Suite 260 30 Red Lion Street, Richmond, England, TW9 1RB, United Kingdom.

50. Wireless Logic Limited, whose registered company number is 03880663 and registered address is Horizon Honey Lane, Hurley, Maidenhead, Berkshire, England, SL6 6RJ, United Kingdom.

51. Ziron Limited, whose registered company number is 07597853 and registered address is Unit 4 Riverside Business Park, Walnut Tree Close, Guildford, England, GU1 4UG, United Kingdom.

Schedule 2 – Proposed SMP condition

NOTE: For illustrative purposes, we have drafted the following condition on the provisional assumption that we will publish a final statement in Q2 2025/2026 and that the proposed price cap will come into force on 1 January 2026.

Part 1 – Commencement

1. The SMP condition in Part 3 of this Schedule 2 applies from 1 January 2026.

Part 2 – Definitions and interpretation

2. In addition to the definitions set out above in this Notification, in this Schedule 2—

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

b) "**CPI_1**" means the amount of the change in the Consumer Prices Index in the period of twelve months ending on 30 September 2025 expressed as a percentage (rounded to one decimal place);

c) "**CPI_2**" means the amount of the change in the Consumer Prices Index in the period of twelve months ending on 30 September 2026 expressed as a percentage (rounded to one decimal place);

d) "**CPI_3**" means the amount of the change in the Consumer Prices Index in the period of twelve months ending on 30 September 2027 expressed as a percentage (rounded to one decimal place); and

e) **"Relevant Period**" means:

i. the period of twelve months beginning on 1 January 2026 and ending on 31 December 2026 (the "**First Relevant Period**");

ii. the period of twelve months beginning on 1 January 2027 and ending on 31 December 2027 (the "**Second Relevant Period**"); and

iii. the period of twelve months beginning on [1 January 2028] and ending on 31 December 2028 (the "**Third Relevant Period**").

3. For the purpose of interpreting the condition in Part 3 of this Schedule 2-

a) Words or expressions shall have the meaning ascribed to them in paragraph 2 above, and otherwise the same meaning as they have in the Act;

b) The Interpretation Act 1978 shall apply as if the SMP condition set out below were an Act of Parliament (c. 30); and

c) Headings and titles shall be disregarded.

Part 3 – SMP condition

Condition S1 – Control of A2P SMS Termination Charge

S1. 1 The Relevant Provider must ensure that for each A2P SMS to be terminated during any Relevant Period to a Mobile Number allocated by Ofcom to the Relevant Provider (excluding any Ported-Out Number) and to any Ported-In Number, the charge (or charges) made by the Relevant Provider for terminating such A2P SMS

(which shall be expressed in pence per A2P SMS and rounded to two decimal places) does not exceed the charge ceiling set out below.

S1.2 Except in so far as Ofcom may otherwise direct, for the purposes of condition S1.1, the charge ceiling is an amount (expressed in pence per A2P SMS and rounded to two decimal places) calculated as follows:

a) $1.9637 \times (100\% + CPI_1)$, for any A2P SMS to be terminated on any day in the First Relevant Period;

b) $1.9637 \times (100\% + CPI_1) \times (100\% + CPI_2)$, for any A2P SMS to be terminated on any day in the Second Relevant Period; and

c) $1.9637 \times (100\% + CPI_1) \times (100\% + CPI_2) \times (100\% + CPI_3)$, for any A2P SMS to be terminated on any day in the Third Relevant Period.

S1.3 Without prejudice to Ofcom's statutory information gathering powers, the Relevant Provider must provide to Ofcom in writing any information reasonably required by Ofcom for the Relevant Provider to demonstrate compliance with this condition at any time upon reasonable notice.

S1.4 The Relevant Provider must comply with any direction Ofcom may make from time to time under this condition.

A6. Regulatory framework

A6.1 This annex provides an overview of the regulatory framework relevant to the market review process, to give some additional context to the matters discussed in this document, including the legal instrument published (in draft form) at Annex A5.

A6.2 Market review regulation is technical and complex; and requires us to apply legislation. We may also have regard to a number of relevant recommendations and guidelines. This overview identifies some of the key aspects of materials relevant to this market review but does not purport to give a full and exhaustive account of all materials that we have considered in reaching our provisional view for these markets.

A6.3 The regulatory framework relevant for market reviews is set out in Part 2 of the Communications Act 2003 (the "**Act**"). In particular, sections 45 to 48C and sections 78-86 set out the procedure for imposing conditions based of a finding of significant market power (the "**SMP conditions**"); sections 87-93 set out specific rules for each type of SMP condition; and sections 93A-93D concern industry commitments.

Market review concept

A6.4 A market review is a process by which we identify relevant markets and carry out analyses of these markets to determine whether they are effectively competitive. Where an operator has significant market power ("**SMP**") in a market, we impose appropriate remedies, known as SMP obligations or conditions, to address this. We explain the concept of SMP below.

A6.5 In carrying out this work, we act in our capacity as the sector-specific regulator for the UK communications industries, including telecommunications. As mentioned above, our functions in this regard are to be found in Part 2 of the Act. The Act requires that Ofcom carry out reviews of competition in communications markets[180] to ensure that SMP regulation remains appropriate and proportionate in light of changing market conditions. In relation to the market for A2P SMS termination, this is the first time that we are carrying out a market analysis, with an associated market power determination and (proposed) SMP conditions.

A6.6 Each market review normally involves three analytical stages:

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

[180] Sections 84 and 84(A) of the Act.

Market definition

Relevant markets

A6.7 The Act provides that, before making a market power determination[181], we must identify "the markets which in [our] opinion are the ones which in the circumstances of the United Kingdom are the markets in relation to which it is appropriate to consider whether to make such a determination"[182] and analyse those markets.

A6.8 In identifying or analysing markets, the Act provides that we may have regard to "EECC materials" relating to market identification and analysis[183], such as the Commission Recommendation on relevant product and service markets published in 2020 (the "**2020 Commission Recommendation**").[184] In this regard, we note that in its White Paper of 21 February 2024 (pp. 32-34), the European Commission proposed that it would no longer recommend at the EU level any market for ex-ante regulation (specifying, however, that ex ante intervention may still be needed in some cases), and consulted stakeholders until 30 June 2024 with the aim of using consultation responses to inform the EU legislative debate.[185]

A6.9 We may only identify a market for the purpose of assessing market power where we consider the three criteria set out in section 79(2B) of the Act (the three criteria test) are met.

A6.10 The three criteria, which are cumulative, are:

- the presence of high and non-transitory structural, legal or regulatory barriers to entry;
- a market structure which does not tend towards effective competition within the relevant time horizon,[186] having regard to the state of infrastructure-based and other competition behind the barriers to entry; and
- competition law alone is insufficient to adequately address the identified market failure(s).

A6.11 As explained in more detail in Section 4, the market in question is the termination of "Application-To-Person" ("A2P") text messages (also known as "SMS"), which basically consists of delivering such messages to their recipients. The text messages that a bank sends to its customers (e.g. with account balance information) or that a hospital sends to

[181] The market power determination concept is used in the Act to refer to a determination that a person has SMP in an identified services market.
[182] Section 79(1) of the Act.
[183] Section 79(2ZA). Section 79(6A) of the Act defines EECC materials as "recommendations or guidelines published by the European Commission, and guidelines published by BEREC, under the Framework Directions or EECC Directive (including those published after IP completion day" i.e. after 31 December 2020.
[184] Commission Recommendation of 18 December 2020 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Code.
[185] Consultation on White Paper: "How to master Europe's digital infrastructure needs?" | Shaping Europe's digital future . The Council conclusions on the Commission's White Paper, published on 6 December 2024, emphasised that "the possibility of ex-ante control on certain access markets needs to be maintained" (Council conclusions, paragraph 28).
[186] Such time period as we determine to be appropriate in relation to the review.

its patients (e.g. with appointment reminders) are examples of A2P SMS. In particular, we have considered the wholesale rates that mobile operators charge to deliver A2P SMS.

A6.12 In considering whether the market for A2P SMS termination meets the three criteria, we have had regard to the 2020 EC Recommendation, which identifies a set of product and service markets within the electronic communications sector in which *ex ante* regulation may be warranted within the EU. These are the markets which the European Commission identified as meeting the three criteria test[187], after observing overall trends across the EU. This can provide a useful indicator of the markets which exhibit competition issues in neighbouring countries (and those which do not) and a consideration of the reasons for this and the trends observed, which may also be relevant to UK circumstances.

A6.13 The termination of fixed and mobile *call* termination markets were identified as susceptible to regulation in the previous version of the EC Recommendation (the 2014 EC Recommendation[188]); such markets do not include SMS termination.[189] The 2020 EC Recommendation no longer recommend the fixed and mobile *call* termination markets for ex-ante regulation. However, this is because Article 75 of the European Electronic Communications Code introduced by Directive 2018/1972[190] (the "**Code**") empowers the Commission to set, by means of a delegated act, Union-wide voice termination rates, based on the efficient costs of providing termination services and applying to any provider of fixed and mobile termination services in the Union.

A6.14 On 18 December 2020, the European Commission adopted a Delegated Regulation (Regulation 2021/654[191]) setting EU-wide maximum termination rates (the "**Eurorates**") for voice calls. These rates are directly applicable to operators in the EU, but do not apply in the UK and do not cover SMS termination.

A6.15 Therefore, there is no harmonisation of termination rates for SMS at European level and the 2020 EC Recommendation does not identify the market for A2P SMS termination (or, more generally, for SMS termination) as susceptible to ex ante regulation. However, in accordance with Article 67(1) of Code, national regulatory authorities could still define that market for ex-ante regulation, if it meets the three criteria test in their national context.

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[187] The three criteria test applied by the European Commission is equivalent to that set out in section 79(2B) of the Act.

[188] Commission Recommendation of 9 October 2014 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services.

[189] In its 2014 decision concerning Case FR/2014/1670, the European Commission noted that the SMS termination market was not covered by the 2007 Recommendation on relevant markets, which included "Voice call termination on individual mobile networks" as a relevant market. Likewise, the 2014 EC Recommendation defined the "Wholesale voice call termination on individual mobile networks" as a relevant market and its Explanatory Note (p. 33) specified that the Commission did not propose defining a separate market for SMS termination.

[190] Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code ('the Code').

[191] Commission Delegated Regulation (EU) 2021/654 of 18 December 2020 supplementing Directive (EU) 2018/1972 of the European Parliament and of the Council by setting a single maximum Union-wide mobile voice termination rate and a single maximum Union-wide fixed voice termination rate.

A6.16 The fact that we identify product and service markets that meet the three-criteria test does not automatically mean that regulation is warranted. Market definition is not an end in itself but rather one input into assessing effective competition.

Sufficiency of competition law

A6.17 In considering the third limb of the three criteria test, that competition law alone is insufficient to adequately address the identified market failure(s), we bear in mind the specific characteristics of the relevant markets we have defined. Generally, the case for *ex ante* regulation is based on the existence of market failures which, by themselves or in combination, mean that the establishment of effective competition might not be possible if the regulator relied solely on *ex post* competition law powers which are not specifically tailored to the sector. Therefore, it may be appropriate for *ex ante* regulation to be used to address such market failures along with any entry barriers that might otherwise prevent effective competition from becoming established within the relevant markets we have defined. By imposing *ex ante* regulation that promotes competition, it may be possible to reduce such regulation over time as markets become more competitive, allowing greater reliance on *ex post* competition law.

A6.18 *Ex post* competition law is also unlikely in itself to bring about (or promote) effective competition, as it prohibits the abuse of dominance rather than the holding of a dominant position itself. In contrast, *ex ante* regulation is normally aimed at actively promoting the development of competition through attempting to reduce the level of market power (or dominance) in the identified relevant markets, thereby encouraging the establishment of effective competition.

A6.19 We generally take the view that *ex ante* regulation provides additional legal certainty for the market under review and may also better enable us to intervene in a timely manner. We also consider that certain obligations are needed as competition law would not remedy the particular market failure, or that the specific clarity and detail of the obligation is required to achieve a particular result.

Forward look

A6.20 Market definition is not a mechanical or abstract process. It requires an analysis of any available evidence of past market behaviour and an overall understanding of the mechanics of a given market sector. The Act requires that Ofcom must conduct a forward-looking assessment of the market, taking into account expected or foreseeable developments that may affect competition in the market.[192]

Approach to market analysis and Modified Greenfield

A6.21 When identifying and analysing markets, we apply the following two principles.

A6.22 First, when identifying wholesale markets for the purposes of section 79(1) of the Act, we start with an analysis of corresponding retail (or other downstream) market(s). We do not formally define the retail market(s), but consider if it is (they are) prospectively competitive

[192] S79(1A) of the Act.

in the absence of wholesale regulation based on a finding of SMP, and therefore whether any lack of effective competition is durable.[193]

A6.23 If the underlying retail market(s) is (are) prospectively competitive under these circumstances, we would conclude that regulation is not needed, or no longer needed in the case of a regulated market, at the wholesale level. If the underlying retail market(s) is (are) not prospectively competitive, then we identify the corresponding wholesale market(s). Where wholesale markets are vertically linked, we identify and analyse the most upstream market first, followed by a subsequent analysis of the markets that are downstream, to determine whether they would be effectively competitive in the presence of regulation upstream.

A6.24 Second, when identifying and analysing a market, we assume that no SMP regulation exists in that particular market. This avoids the risk of circularity in our assessment – i.e. a finding of no SMP in a market which is predicated on pre-existing *ex ante* regulation of that market (this is often referred to as the 'Modified Greenfield approach').[194]

A6.25 We note that this approach is consistent with that set out in the EC SMP Guidelines.[195]

Product and geographic dimensions

A6.26 We use competition law methodologies in the market review analysis. In particular, there are two dimensions to the definition of a relevant market: the relevant products to be included in the same market and the geographic extent of the market.

A6.27 The boundaries between markets are determined by identifying competitive constraints on the price setting behaviour of firms. There are two main constraints to consider:

- to what extent it is possible for a customer to substitute other services for those in question in response to a price increase (demand-side substitution); and
- to what extent suppliers can switch, or increase, production to supply the relevant products or services in response to a price increase (supply-side substitution).

A6.28 The hypothetical monopolist test is a tool used to identify good demand-side and supply-side substitutes. In this test, a product is considered to constitute a separate market if the hypothetical monopolist supplier could impose a small but significant non-transitory increase in price (SSNIP) above the competitive level without losing sales to such a degree as to make this price rise unprofitable. If such a price rise would be unprofitable, because consumers would switch to other products or because suppliers of other products would begin to compete with the hypothetical monopolist, then the market definition should be expanded to include the substitute products.[196]

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[193] Our analysis takes into account the effects of other types of (sector-specific) regulation, decisions or legislation applicable to the relevant retail and related wholesale market(s) during the relevant period.
[194] *Hutchison 3G UK Ltd v The Office of Communications* [2009] EWCA Civ 683 https://www.catribunal.org.uk/sites/default/files/1083_Hutchison_CoA_160709.pdf, paragraphs 64-66.
[195] Guidelines on market analysis and the assessment of significant market power under the EU regulatory framework for electronic communications networks and services (2018/C 159/01), paragraphs 15-18.
[196] In the case of zero-price products (i.e., products supplied at a zero monetary price), it may be appropriate to consider alternatives to the SSNIP test, such as assessing the switching behaviour of customers in response to a small but significant non-transitory decrease of quality (the "SSNDQ test"). See paragraph 98 of Commission Notice C/2024/1645.

A6.29 The starting point for the application of hypothetical monopolist test can be referred to as the 'focal product',[197] and typically starts from the narrowest potential market definition.[198]

A6.30 We may consider both demand-side substitution and supply-side substitution possibilities to consider whether either provide additional constraints on the pricing behaviour of the hypothetical monopolist. In this assessment, supply-side substitution is considered to be a low-cost form of entry which can take place within a reasonable timeframe (e.g. up to 12 months). For supply-side substitution to be relevant not only must suppliers be able, in theory, to enter the market quickly and at low cost by virtue of their existing position in the supply of other products or geographic areas, but there must also be an additional competitive constraint arising from such entry into the supply of the service in question.

A6.31 In relation to defining the relevant geographic markets, this comprises an area in which the undertakings concerned are involved in the supply and demand of the relevant products or services, in which the conditions of competition are sufficiently homogeneous, and which can be distinguished from neighbouring areas in which the prevailing conditions of competition are significantly different. Areas in which the conditions of competition are heterogeneous do not constitute a uniform market.

A6.32 Our approach to market definition follows that used by the UK competition authorities and is consistent with the EC SMP Guidelines.

Relationship with ex post competition law

A6.33 While competition law methodologies are used in identifying the relevant markets *ex ante*, the markets identified will not necessarily be identical to markets defined in *ex post* competition law cases, especially as (i) the markets identified *ex ante* are based on an overall forward-looking assessment of the structure and the functioning of the market under examination, and (ii) as noted above, in carrying out an *ex ante* assessment, we assume there is no SMP regulation in place in the market under examination. Accordingly, the economic analysis carried out for the purpose of this review, including the markets we have identified, is without prejudice to any analysis that we may carry out in relation to any investigation pursuant to the Competition Act 1998[199] (relating to the application of the Chapter I or II prohibitions) or the Enterprise Act 2002.

Market analysis

Effective competition

A6.34 The Act requires that we carry out market analyses of identified markets for the purpose of making or reviewing market power determinations. The Act requires that such analyses are normally to be carried out within five years from the publication of a previous market

[197] This reflects the terminology used by UK competition authorities (see OFT, Market definition, December 2004, OFT403, www.oft.gov.uk/shared_oft/business_leaflets/ca98_guidelines/oft403.pdf, which has subsequently been adopted by the CMA Board).

[198] Paragraph 3.2 of the OFT Market Definition Guidelines explains that 'previous experience and common sense will normally indicate the narrowest potential market definition, which will be taken as the starting point for the analysis'.

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

power determination relating to that market. Exceptionally, the five-year period may be extended for up to one additional year.[200] As mentioned above, this is the first time that we carry out a market analysis in relation to the market for A2P SMS termination.

A6.35 In carrying out a market analysis, the key issue for Ofcom is to determine whether any one or more operator(s) has SMP.

A6.36 The definition of SMP is equivalent to the concept of dominance as defined in competition law.[201] In essence, it means that an undertaking in the relevant market is in a position of economic strength affording it the power to behave to an appreciable extent independently of competitors, other telecoms providers which are its customers, and ultimately consumers.

A6.37 The Act provides that, in considering whether to make or revise a market power determination, we may have regard to EECC materials relating to market analysis or the determination of what constitutes significant market power, such as the EC SMP Guidelines.[202]

A6.38 The EC SMP Guidelines consider the specific application of competition law principles to the electronic communications sector. They reflect our understanding of the factors driving competitive conditions in the markets we are reviewing. We have therefore had regard to the EC SMP Guidelines in considering whether to make market power determinations in this document.

A6.39 In line with the EC SMP Guidelines, we consider that market shares provide a useful first indicator of competitive conditions in the market, and that they should however be interpreted in light of the relevant market conditions.[203] According to established case law, a market share in excess of 50% is itself evidence of a dominant position, save in exceptional circumstances.[204] On this point, we have also had regard to the judgment of the Competition Appeal Tribunal in BCMR 2019. The Tribunal confirmed that the existence of a high market share is to be a trigger for a full assessment, but not to be determinative in itself.[205]

A6.40 The EC SMP Guidelines set out, additionally to market shares, criteria that can be used to measure the power of an operator to behave to an appreciable extent independently of its competitors, customers, and consumers, including:

- barriers to entry;
- barriers to expansion;
- absolute and relative size of the undertaking;
- control of infrastructure not easily duplicated;

[200] Section 84A of the Act.
[201] Section 78(1) of the Act. References in section 78 to dominance of a market are to be construed, so far as it is appropriate to do so, in the same way as the reference in section 18(1) of the Competition Act 1998 to a dominant position in a market.
[202] Section 79(2BA) of the Act.
[203] EC SMP Guidelines, paragraph 54.
[204] EC SMP Guidelines, paragraph 55.
[205] *TalkTalk Telecom Group plc and Vodafone Limited v Ofcom (BCMR 2019)*, Judgment of 5 March 2020 [2020] CAT 8, at paragraphs 163-171 and 282-283.

- technological and commercial advantages or superiority;
- absence of or low countervailing buying power;
- vertical integration;
- engagement in contractual relations with other market players that could lead to market foreclosure; and absence of potential competition.[206]

A6.41 A dominant position can derive from a combination of these criteria which when taken separately may not necessarily be determinative.

Remedies

Powers and legal tests

A6.42 Section 87(1) of the Act provides that where we have made a determination that a person has SMP in an identified services market, we shall set such SMP conditions authorised by section 87 as we consider it appropriate to apply to that person in respect of the relevant network or relevant facilities.[207]

A6.43 Section 87 of the Act identifies a number of SMP obligations that Ofcom are authorised to set including: conditions making provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to, price control, transparency, non-discrimination, accounting separation and cost accounting.[208]

A6.44 For each and every SMP obligation, we explain why it satisfies the requirement in section 47(2) of the Act that the obligation is:

a) objectively justifiable in relation to the networks, services, facilities, apparatus or directories to which it relates;
b) not such so as to discriminate unduly against particular persons or against a particular description of persons;
c) proportionate to what the condition (or modification) is intended to achieve; and
d) transparent in relation to what is intended to be achieved.

A6.45 As part of ensuring that an SMP obligation meets this requirement, we consider whether it is based on the nature of the competition problem(s) we have identified in our market analysis.

A6.46 Additional legal requirements may also need to be satisfied depending on the SMP obligation in question. For example, we are subject to additional requirements when imposing price controls and cost recovery obligations.

A6.47 Specifically, we explain why any such SMP obligation satisfies the requirements of section 88 of the Act. Namely:

[206] EC SMP Guidelines, paragraph 58.
[207] Section 84(4) of the Act provides that where Ofcom determine that an undertaking to whom any SMP conditions apply is no longer a person with significant market power in that market, Ofcom must revoke every SMP services condition applied to that person by reference to the market power determination made on the basis of the earlier analysis.

- our analysis indicates a risk that the telecoms provider concerned might fix and maintain prices at an excessively high level or impose a price squeeze so as to have adverse consequences for end-users of public electronic communications services;
- we consider the setting of the obligation is appropriate for the purposes of –

  i) promoting efficiency;
  ii) promoting sustainable competition;
  iii) conferring the greatest possible benefits on the end-users of public electronic communications services having regard where relevant to the market analysis, to the long term interests of end-users in the use of next-generation networks; and
  iv) where relevant to the market analysis, promoting the availability and use of new and enhanced networks.[209]

A6.48 In setting such an SMP condition we also take account of:

i) the extent of investment by the telecoms provider in the matters to which the SMP obligation relates; and
ii) where the condition involves price controls on the provision of network access to existing network elements, the benefits of predictable and stable wholesale prices in ensuring:

   a) efficient market entry; and
   b) sufficient incentives for all undertakings to bring into operation new and enhanced networks.[210]

A6.49 Where an obligation to provide third parties with network access is considered appropriate, we take into account factors including:

i) the feasibility of the provision of the network access;
ii) the technical and economic viability, having regard to the state of market development, of installing and using facilities that would make the network access unnecessary;
iii) any technological developments that, in our opinion, are likely to affect the design and management of the relevant network or facilities;
iv) the need to ensure that the provision of the proposed network access does not have the effect of favouring one form of technology over another in relation to the design and management of the electronic communications networks;
v) the investment of the network operator who is required to provide access (taking account of any public investment made);
vi) the need to secure effective competition (including, where it appears to us to be appropriate, economically efficient infrastructure-based competition) in the long term and to support innovative business models that support sustainable competition; and
vii) any rights to intellectual property that are relevant to our proposals.[211]

A6.50 In this document, we demonstrate the application of the relevant requirements to the SMP obligations we are proposing to impose.[212] In doing so, we also set out our initial assessment of how, in our opinion, the performance of our general duties under section 3

[209] Section 88(1) of the Act.
[210] Section 88(2) of the Act.
[211] Section 87(4) of the Act.
[212] See, in particular, the reasoning in Section 6 of this document.

of the Act would be secured or furthered by our regulatory intervention, and that it would be in accordance with the six requirements in section 4 of the Act (see below). This is also relevant to our assessment of the likely impact of implementing our proposals.

Ofcom's general duties – section 3 of the Act

A6.51 Under the Act, our principal duty in carrying out our functions is to further the interests of citizens in relation to communications matters and to further the interests of consumers in relevant markets, where appropriate by promoting competition.

A6.52 In doing so, we are required to secure a number of specific objectives and to have regard to a number of matters set out in section 3 of the Act.

A6.53 In performing our duties, we are also required to have regard to a range of other considerations, as appear to us to be relevant in the circumstances. For the purpose of this review, we consider that a number of such considerations are relevant, in particular:

- the desirability of promoting competition in relevant markets;
- the desirability of encouraging investment and innovation in relevant markets; and
- the desirability of ensuring that relevant markets facilitate end-to-end connectivity in the interests of consumers in those markets.

A6.54 We are also required to have regard to the principles under which regulatory activities should be transparent, accountable, proportionate, consistent, and targeted only at cases in which action is needed, as well as to the interest of consumers in respect of choice, price, quality of service and value for money.

A6.55 However, we have a wide measure of discretion in balancing our statutory duties and objectives. In doing so, we will take account of all relevant considerations, including the responses that we will receive during our consultation process, in reaching our conclusions.

Section 4 of the Act – duties for the purposes of fulfilling obligations

A6.56 Section 4 of the Act requires us, when carrying out our market review functions, to act in accordance with six requirements for regulation which are in summary:

a) to promote competition in the provision of electronic communications networks and services, associated facilities and the supply of directories;
b) to promote the interests of all members of the public in the United Kingdom;
c) to take account of the desirability of Ofcom's carrying out of its functions in a manner which, so far as practicable, does not favour one form of or means of providing electronic communications networks, services or associated facilities over another (i.e. to be technologically neutral);
d) to encourage, to such extent as Ofcom considers appropriate the provision of network access and service interoperability for the purpose of securing: efficient and sustainable competition; efficient investment and innovation; and the maximum benefit for customers of telecoms providers and of persons who make associated facilities available;
e) to encourage compliance with certain standards in order to facilitate service interoperability, end-to-end connectivity, and secure freedom of choice for the customers of telecoms providers; and

f) to promote connectivity and access to very high capacity networks[213] by members of the public and businesses in the United Kingdom.

A6.57 We consider that these requirements are relevant to the matters under review and that no conflict arises in this regard with those specific objectives in section 3 of the Act that we consider are particularly relevant in this context.

Section 4A of the Act – taking account of EC recommendations

A6.58 Section 4A of the Act provides that in carrying out certain functions (including, among others, our functions in relation to market reviews), we may take account of recommendations issued by the European Commission under Article 19(1) of the Framework Directive[214] or Article 38(1) of the EU Code if the recommendations appear to us to be relevant to those functions.

A6.59 We make clear in the relevant sections of this statement where we have regard to the EC recommendations, such as the 2020 Commission Recommendation mentioned above.

Impact assessment – section 7 of the Act

A6.60 Section 7 of the Act requires us to carry out and publish an assessment of the likely impact of implementing a proposal which would be likely to have a significant impact on businesses or the general public, or when there is a major change in Ofcom's activities.

A6.61 More generally, impact assessments form part of good policy making and we therefore expect to carry them out in relation to a large majority of our proposals. We use impact assessments to help us understand and assess the potential impact of our policy decisions before we make them. They also help us explain the policy decisions we have decided to take and why we consider those decisions best fulfil our applicable duties and objectives in the least intrusive way. Our impact assessment guidance sets out our general approach to how we assess and present the impact of our proposed decisions.

A6.62 This assessment is set out in Section 6.

Equality impact assessment

A6.63 We have given careful consideration to whether our proposal will have a particular impact on persons sharing protected characteristics (broadly including race, age, disability, sex, sexual orientation, gender reassignment, pregnancy and maternity, marriage and civil partnership and religion or belief in the UK and also dependents and political opinion in Northern Ireland), and in particular whether they may discriminate against such persons or

[213] A *"very high capacity network"* is set out in the Act as meaning "an electronic communications network which —
(a) consists wholly of optical fibre elements at least up to the distribution point at the serving location; or
(b) is capable of delivering, under usual peak-time conditions, network performance that, in OFCOM's opinion, is similar, in terms of available downlink and uplink bandwidth, resilience, error-related parameters and latency and its variation, to the network performance of a network falling within paragraph (a)."

[214] Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services, as amended by Directive 2009/140/EC of the European Parliament and of the Council.

impact on equality of opportunity or good relations. This assessment helps us comply with our duties under the Equality Act 2010 and the Northern Ireland Act 1998.[215]

A6.64 When thinking about equality we think more broadly than persons that share protected characteristics identified in equalities legislation and think about potential impacts on various groups of persons (see paragraph 4.7 of our impact assessment guidance).

A6.65 In particular, section 3(4) of the Communications Act 2003 also requires us to have regard to the needs and interests of specific groups of persons when performing our duties, as appear to us to be relevant in the circumstances. These include:

a) the vulnerability of children and of others whose circumstances appear to us to put them in need of special protection;
b) the needs of persons with disabilities, older persons and persons on low incomes; and
c) the different interests of persons in the different parts of the UK, of the different ethnic communities within the UK and of persons living in rural and in urban areas.

A6.66 We examine the potential impact our policy is likely to have on people, depending on their personal circumstances. This also assists us in making sure that we are meeting our principal duty of furthering the interests of citizens and consumers, regardless of their background and identity.

A6.67 Our equality impact assessment in set out in Section 2.

A6.68 Ofcom can provide information in a variety of formats on request, e.g. accessible PDF, large print, easy read, audio recording or braille. If you let us know what information you require and in what format, we will consider the request and respond within 21 days.

Welsh language impact assessment

A6.69 The Welsh Language (Wales) Measure 2011 made the Welsh language an officially recognised language in Wales. This legislation also led to the establishment of the office of the Welsh Language Commissioner who regulates and monitors our work. Ofcom is required to take Welsh language considerations into account when formulating, reviewing or revising policies which are relevant to Wales (including proposals which are not targeted at Wales specifically but are of interest across the UK).[216]

A6.70 Where the Welsh Language Standards are engaged, we consider the potential impact of a policy proposal on (i) opportunities for persons to use the Welsh language; and (ii) treating the Welsh language no less favourably than the English language. We also consider how a proposal could be formulated so as to have, or increase, a positive impact, or not to have adverse effects or to decrease any adverse effects.

A6.71 Our Welsh language impact assessment is set out in Section 2.

[215] Further detail is set out in section 149 of the Equality Act 2010 and section 75 of the Northern Ireland Act 1998.
[216] See Standards 84 – 89 of Hysbysiad cydymffurfio (in Welsh) and compliance notice (in English). Section 7 of the Welsh Language Commissioner's Good Practice Advice Document provides further advice and information on how bodies must comply with the Welsh Language Standards.

UK Government's Statement of Strategic Priorities

A6.72 Under section 2B(2) of the Act, when exercising our functions relating to telecoms, management of radio spectrum and postal services, we are required to have regard to the UK Government's Statement of Strategic Priorities (SSP).[217] We set out in Section 2 of this document further details of how we have done this.

The desirability of promoting economic growth

A6.73 In exercising our regulatory functions, we are also required to have regard to the desirability of promoting economic growth (the "growth duty").[218] In particular, we must consider the importance for the promotion of economic growth of exercising the regulatory function in a way which ensures that regulatory action is taken only when it is needed, and any action taken is proportionate. Section 110(3) of the Deregulation Act 2015 requires us to have regard to the "Growth Duty: Statutory Guidance" (revised by Government in May 2024).

Regulated entity

A6.74 The power in the Act to impose an SMP obligation by means of an SMP services condition provides that it is to be applied only to a "person" whom we have determined to be a person having SMP in a specific market for electronic communications networks, electronic communications services or associated facilities (i.e. the "services market").[219]

A6.75 We consider it appropriate to prevent a dominant provider to whom an SMP services condition is applied exploiting the principle of corporate separation where that dominant provider is part of a group of companies. The dominant provider should not use another member of its group to carry out activities or to fail to comply with a condition, which would otherwise render the dominant provider in breach of its obligations.

A6.76 To secure that aim, we apply the SMP conditions to the person in relation to which we have made the market power determination in question by reference to the so-called "Relevant Provider", which we define as "[X plc], whose registered company number is [000], and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined in section 1159 of the Companies Act 2006 in so far as they operate as communications providers in the relevant market".

[217] Department for Digital, Culture, Media & Sport, 2019. *Statement of Strategic Priorities* (SSP). The SSP for telecommunications, the management of radio spectrum, and postal services was designated on 29 October 2019, having been laid in draft before Parliament on 18 July 2019.
[218] Section 108 of the Deregulation Act 2015, which was extended to Ofcom's regulatory functions by The Economic Growth (Regulatory Functions) (Amendment) Order 2024.
[219] Section 46(8) of the Act.

A7. Glossary

Term	Definition
A2P SMS messaging services	A service which allows a business or other organisation (e.g. public sector, third sector) to send a text message (composed principally of letters or numbers) from a software application to a mobile number on a mobile network.
Aggregators	The provider of a platform or service which handles large volumes of A2P SMS messages, from multiple MSPs and/or business senders and routes them to MCPs. Aggregators sometimes act as MSPs dealing directly with business senders, and/or as a wholesale provider to MSPs.
Business senders	Senders of business messages, including those sent via A2P SMS. These business senders include both commercial businesses (large and small) and public bodies (e.g. NHS providers).
Countervailing buyer power (CBP)	The restraint that a buyer is able to place on any attempt by the seller to set its prices above the competitive level.
Direct “on-net” route	The route for A2P SMS traffic that comes via an Aggregator which sends the traffic directly to the relevant MCP to be terminated on the numbers of the message recipients. We sometimes refer to this route as the “on-net route”.
Four large MNOs (Mobile Network Operator)	The four largest MNOs in the UK – BT/EE, Three, VMO2 and Vodafone.
Indirect “off-net” route	The route for A2P SMS traffic that comes via an Aggregator which sends the traffic via another interconnecting MCP, in the first instance, which then forwards the traffic on to the terminating MCP to be terminated on the numbers of the message recipients. This route consists of two stages: Aggregator sends A2P SMS traffic first to an operator with which it is directly connected (for this operator this traffic is considered “off-net”). Then this operator forwards this traffic via interconnection to another, terminating MCP. We sometimes refer to this route as the “off-net route”.
Interconnect rate	The rate charged by a terminating MCP to the interconnecting MCP to terminate a message on the number of the message recipient when sent via the indirect “off-net” route.

Messaging Service Providers (MSPs)	A provider of retail business messaging services who provides them directly to business senders. Acts as an intermediary between business senders and Aggregators.
Mobile Communications Providers (MCPs)	Mobile operators which offer a range of mobile services. In this context, these operators offer A2P SMS termination services to Aggregators and/or other mobile operators. These operators include both MNOs and MVNOs.
Mobile Network Operators (MNOs)	Mobile operators which own all the network infrastructure used to deliver messages to their customers/number ranges.
Mobile virtual network operators (MVNOs)	Mobile operators which generally do not own all their own network infrastructure but which instead use an MNO's network to offer all or part of their services to consumers. Often referred to as "thick", where they may have significant core network infrastructure or "thin" where they are almost fully dependent on the MNO hosting their services.
Number range holder	An MCP to which Ofcom has allocated a mobile number range.
Online communications services (OCS)	Applications that provide an OTT communications service on an end user's device. This could be in the form of either text-based messaging and/or voice or video calls, which can only be sent to or received by other users of the same messaging service or platform.
Off-net termination	The message is not terminated on the network of the interconnecting MCP that the Aggregator routes it, but is instead forwarded to a second terminating MCP.
On-net termination	The message is terminated on the network of the MCP that the Aggregator first routes it to.
Over-the-top service (OTT)	A type of service provided "over the top" of an existing data network connection such as a fixed or wireless broadband connection. Examples of OTT services include mobile VoIP calls, as well as messaging applications such as WhatsApp and Facebook.
Ported-in number	In relation to each mobile operator, a ported-in number is any Mobile Number not allocated by Ofcom to that operator which has been retained by one of its current subscribers (through the number portability process) when switching away from another mobile operator.
Ported-out number	In relation to each mobile operator, a ported-out number means any Mobile Number allocated by Ofcom to that provider which has been retained by a former subscriber of that provider who is no longer one of its current subscribers (through the number portability process) when switching to another mobile operator.

Price cap	A type of charge control which sets the maximum price that a communication provider can charge for the provision of a particular product or service.
Small but Significant Non-transitory Increase in Price (SSNIP)	This is typically taken to be an increase in price of between 5-10% above the competitive level and is used when considering whether hypothetical monopolist suppliers in a market could sustain a profit at such a price i.e., will consumers switch services because of the price increase. If a consumer substitutes for another service/product, that is considered to be in the same market.
Small & medium sized enterprises (SMEs)	Small businesses who usually require significant support in terms of applications and integration with telecommunications services.
RCS Business Messaging (RBM)	Rich Communications Services allowing Business senders to send messages to message recipients, i.e. application to person message flows. Only supported if mobile user has a smart phone configured for this service.
Rich Communications Services (RCS)	A more advanced form of messaging to mobile handsets which allows for features such as videos, images and other interactive elements to be sent. RCS supports person-person message flows. Only supported if mobile user has a smart phone configured for this service.
Termination	In relation to A2P or P2P SMS, it means the termination or delivery of these messages to the recipient's mobile number by the relevant MCP. Termination may sometimes also refer to the termination or delivery of A2P RCS or A2P Online Messages on an online messaging application linked to either a mobile number or a user account.
Termination rate	Rate charged by an MCP to terminate the message on the number of the message recipient.
WiFi connection	Used to differentiate a message received by a phone using a fixed broadband service and its supporting WiFi network rather than an MNO's, specialised wireless network.