
Annexes - Consumer switching

Annexes 2-11 of Consumer switching: Decision on reforming switching of mobile communications services statement

NON-CONFIDENTIAL VERSION

STATEMENT ANNEXES

Publication Date: 19 December 2017

Contents

Annex

A2. Auto-Switch process reform	1
A3. Estimated costs of implementation	18
A4. Likely costs and benefits of introducing our package of reforms	42
A5. Calculation of time savings	69
A6. Calculation of reduction in double-paying	81
A7. Estimating take-up of Auto-Switch and the benefits of introducing Auto-Switch using a WTP approach	88
A8. Benefits for those not currently switching	104
A9. GPL reform option	111
A10. Modifications to the General Conditions under section 48 of the Act	120
A11. Notification of modifications to the General Conditions under section 48(1)(a) of the Act	128

A2. Auto-Switch process reform

Introduction

A2.1 This annex sets out respondents' views and Ofcom's decision on the detailed specification of Auto-Switch together with the process flow diagrams for Auto-Switch.

Stakeholder responses

A2.2 Stakeholders' views on the design and features of Auto-Switch are set out below, together with our assessment of those views, grouped as follows:

- Informing consumers about the implications of switching
- Inclusion of non-porters
- Multi-SIM accounts
- Short codes
- Compensation if the switch or cancellation takes more than one working day
- Timing of ports
- Service level parameters under General Conditions
- Rejection of requests for PAC/N-PAC or Switching Information
- Verification and fraud
- Third-party intermediaries

Informing consumers about the implications of switching

Respondents' views

A2.3 A number of respondents raised concerns about the extent to which consumers would be informed about the implications of switching provider, were they to switch under our Auto-Switch proposals.

A2.4 BT/EE¹, O2², Virgin³, Vodafone⁴, and [S<]⁵ argued that the form and content of Switching Information under Auto-Switch is insufficient, and/or may lead to poor or worse switching decisions than the status quo (which involves a leaving conversation between the consumer and the losing provider).

A2.5 Several respondents argued that a text message was not the correct format to convey important Switching Information:

- Virgin, Vodafone, and O2 said that phone requests for a PAC or cancellation provide fuller and better opportunities than text or online messages to inform consumers

¹ BT/EE May 2017 consultation response, §9, §51, §73-§77.

² O2 May 2017 consultation response, §27-§28, §30, §33, §56-§60, §91, §151-§156.

³ Virgin May 2017 consultation response, §7-§8, §17-§18.

⁴ Vodafone May 2017 consultation response, pages 16-17, page 27.

⁵ [S<] May 2017 consultation response, [S<].

about the implications of switching and other important details when switching e.g. when to cancel direct debits.

- O2 suggested that, for consumers who did not wish to speak to their losing provider to obtain a PAC, it would be easier to provide Switching Information via an online account rather than by text, though this information would still be less comprehensive than via a phone conversation.
- Virgin and O2 said a text message did not have sufficient capacity to convey full Switching Information. Virgin invited Ofcom to illustrate how this would be presented in a 160-character text message.
- BT/EE argued that including a web link in the text message may not be effective, as only a small proportion of consumers would make use of it.⁶

A2.6 Some respondents highlighted that mobile contracts will often have complexities that need to be conveyed to a consumer considering switching, such as the impact on additional features, credit scores or the calculation of complex ETCs:

- BT/EE, Virgin, Vodafone, and O2 said that mobile services and contract features are not homogenous across packages or providers, including where mobile services are taken as part of a bundle of communications services, or a consumer has a multi-mobile account. Consumers who are only informed about Switching Information by text and/or online may therefore not receive relevant details about the service package which may be lost when switching.
- Virgin⁷ and O2⁸ highlighted that some elements of a mobile service package may constitute a loan, for example for the handset, which is regulated by the FCA. Virgin argued that more detailed consideration needs to be given about whether it is appropriate to inform a consumer via a text message about an outstanding loan which could affect their credit score.
- [redacted], in the context of the provision of information from smaller retailers to their upstream provider,⁹ raised the question of where liability for the provision of accurate ETCs would lie, where details provided by the reseller to the upstream provider are inaccurate.¹⁰

A2.7 [redacted] also said they favoured including the contract end date as part of Switching Information.¹¹

Ofcom's assessment

⁶ BT/EE May 2017 consultation response, page 13.

⁷ Virgin May 2017 consultation response, §8.

⁸ O2 May 2017 consultation response, §97.

⁹ We note that a smaller retailer may choose to contract with their upstream provider who will pass on Switching Information to the smaller retailer's customers. The accurate calculation of ETCs in these circumstances relies on provision of accurate information from smaller retailers to their upstream providers, and that this may span more than one level in the mobile value chain.

¹⁰ [redacted] May 2017 consultation response, [redacted].

¹¹ [redacted] May 2017 consultation response, [redacted].

Annexes 2-11: Consumer Switching

Decision on reforming the switching of mobile communications services

- A2.8 We agree it is important that consumers are well informed (and that they have the right information tools) about any consequences of switching away from their provider, before they commit to switch. Our aim is to ensure that consumers are at least as well informed under Auto-Switch as under current PAC arrangements.
- A2.9 We acknowledge that the multiplicity of providers' offers, including the bundling by some providers of mobile with other communications services, can mean the details and consequences of any switch are correspondingly varied. It may be the case for example that where mobile services are taken as part of a bundle of communications services, discounts given for taking the bundle may be lost where the consumer switches mobile service. We also recognise this may be more acute where it relates to business customers with more complex tariffs.
- A2.10 We also believe it is important for consumers to retain control over the degree of interaction they have with their existing provider when requesting a PAC/N-PAC, or when cancelling, and that the choice to use text and online routes provides this degree of control. We disagree, as suggested by Virgin, Vodafone and O2, that a phone conversation between the consumer and their current provider is always better or best in terms of delivering information about the implications of switching, or that other forms of communication are by comparison always less effective. However, we recognise that these formats for delivering the PAC/N-PAC may be limited in the detail that they can deliver.
- A2.11 In our judgment, Auto-Switch strikes an appropriate balance between giving consumers control over interactions they may wish to have with their provider and ensuring they are adequately informed about switching implications, as follows:
- For consumers who have signalled they intend to switch by requesting a PAC/N-PAC:
 - Consumers must receive the Switching Information we have set out, via the means they made the request, and by text.
 - This information must be accurate at the date of request and would capture the major financial implications of switching in terms of any new charges that may accrue to, or credit that is lost by, consumers who switch.
 - Providers can include other factual information that they consider consumers should know about when they switch.
 - It remains open to consumers to phone their existing provider should they wish to.
 - For consumers who are considering switching or who simply wish to know more:
 - Providers must enable consumers to request Switching Information by text, or via their online account.
 - It remains open to consumers to phone their existing provider should they wish to.
- A2.12 However, we have refined our proposals to meet concerns raised by respondents in relation to Switching Information.

Provision of Switching Information

- A2.13 As part of Auto-Switch, mobile providers will be required to provide Switching Information via consumers' online account facilities. In our view, providers will be able to ensure

consumers are sufficiently informed about relevant details of the service package which may be lost when switching. In particular, the provision of information through online accounts provides the opportunity for more detailed and comprehensive information to be provided.

- A2.14 We are therefore amending our proposals to require that the text message sent to consumers containing the PAC/N-PAC and the Switching Information also contains a link to their online account facility held with their mobile provider. This link should direct the customer, at a minimum, to the customer's account login page.¹²
- A2.15 It would be at the discretion of each provider to tailor the information available via their online accounts to ensure that its customers are aware of details and elements of their current mobile package that might be lost or amended when switching. However, it would not be appropriate for providers to encourage or mislead consumers to call them through this information.
- A2.16 The availability of information via online account facilities will enable consumers to inform themselves about relevant details of their own mobile services, including any financial implications. In our view, this will be an important route for consumers, in addition to text. We are also introducing transparency requirements which will oblige providers to provide clear guidance on the switching process, including the availability and sources of further information.
- A2.17 Providers have raised concerns about the ability of text to deliver relevant information about the implications of switching and have queried how this might be achieved with 160 characters. In our view, there will be sufficient capacity within a text message to convey the key financial implications of switching.
- A2.18 We note that providers typically send texts to their customers when abroad which are longer than 160 characters, such as EE below:

"Hi from EE. Great news, while you're in Germany you can use your plan minutes, texts and data allowances at no extra cost. Calls to countries outside the EU are £1.20 per min and texts 50p each. Other charges are the same as when you're in the UK."

- A2.19 This text is 48 words and 198 characters.
- A2.20 Under Auto-Switch we are anticipating a similar length text such as the following one with 45 words and 290 characters:

¹² We note this matches our intention as set out in our March 2016 consultation §5.50, "We would therefore propose requiring that the consumer is provided with a link to their online account in their PAC / Switching Information or confirmation text."

“Your PAC/[N-PAC] is XXXXXXXXXX and is valid for 30 days. If you switch today [Provider Y] will charge you £XX.XX for the remainder of your contract. More information about your current mobile service is available on your online account, visit [www.\[Y\].co.uk/\[landing_page\]](http://www.[Y].co.uk/[landing_page]).”

- A2.21 In our judgement, there is sufficient capacity in a text to deliver the key information that consumers require when considering whether to switch. We suggest that the precise approach and wording of the text message will be a matter for providers to consider when implementing Auto-Switch.
- A2.22 In relation to [S&K] submission, we agree that accurate ETC provision by an upstream provider on behalf of any downstream reseller will rely on the accuracy of information provided by the downstream reseller, and would reiterate that downstream resellers need to ensure this is provided and accurate information is generated. We consider the two-day timescale in respect of business tariffs is sufficient to ensure this flow of information.
- A2.23 Providers with a retail relationship with consumers, including any downstream reseller, will be subject to GC requirements to provide their customers with Switching Information, including information about ETCs, where such a customer seeks to switch. In taking any enforcement action regarding a breach of such GCs, for example through persistent or willful provision of inaccurate ETC information, Ofcom would therefore in the first instance look to the relevant downstream resellers. We would also have regard to the content of any relevant contractual relationships between upstream and downstream providers in requiring ETC information to be passed to customers, and the willingness of upstream providers to enter into such contractual relationships.

Inclusion of non-porters

Respondents' views

- A2.24 BT/EE suggested that there are capacity constraints within the current porting system and that it would therefore be unwise to extend Auto-Switch, via N-PAC to those switchers who do not wish to port their number. It suggested that using porting capacity for non-porting switchers could result in porting customers being negatively impacted.¹³
- A2.25 Vodafone noted that Ofcom has put forward Auto-Switch as a mechanism for consumers who wish to switch without porting their number and argued that Ofcom has put this forward on the incorrect premise that the current porting process represents both a termination and commencement of a customer's contract. Vodafone suggested that on this basis Ofcom's proposals for N-PAC are not an extension of the current PAC process and are not feasible.¹⁴

¹³ BT/EE May 2017 consultation response §7-§8, §12, §62, §66-§70, §108.

¹⁴ Vodafone May 2017 consultation response §3.1, §3.3.

Ofcom's assessment

A2.26 We do not consider that including consumers who wish to switch without porting their number in our Auto-Switch reform is inappropriate or would negatively impact the experiences of those who switch and port. The current PAC process enables the seamless activation of a new service (ported number) and the deactivation of the old service and we consider that this can be extended to consumers who switch but do not port. We have designed Auto-Switch in a way that would not impact adversely on the current porting process and so increased volumes of switchers should be able to be accommodated by providers' switching systems.

Multi-SIM accounts

Respondents' views

- A2.27 [X] noted that some providers offer plans where multiple SIMs are provided as part of one contract.¹⁵ They suggested that issues could arise under our Auto-Switch proposal where consumers attempt to switch provider for these or similar products.
- A2.28 In particular, [X] suggested that under current switching arrangements, when an account holder sets up a new [X] account, the SIMs purchased are sent to the account holder. When these are individually activated, the account holder is asked to supply a PAC, ensuring the correct number is ported to the correct SIM.
- A2.29 [X] argued that, under Auto-Switch, there are two possible points for the PAC to be given to the new provider of a multi SIM product, and that both raise issues:
- Consumer provides the PAC to their new provider at point of sale
 - The provider does not know at the point of sale which of the SIMs purchased is to receive which ported number. Hence when the customer receives the SIMs (e.g. by post, after an online purchase), and the activation of these automatically initiates the port, there will be no indication which SIM has which number.
 - Consumer provides the PAC to their new provider after the SIMs arrive
 - In this case, the provider has the difficulty of a) contacting the account holder by text as he/she may hold one of several SIMs and b) ensuring it is the account holder who is instructing us to allocate the PAC code to the right SIM and not one of the other SIM holders.
- A2.30 [X] also argued that in such circumstances there is an authentication or validation issue if a consumer with one of these SIMs requests their PAC/N-PAC by text, because they cannot tell from such a text whether or not the person making the request is the authorised account holder. They noted that building in functionality to detect whether or not the

¹⁵ [X] May 2017 consultation response [X].

person making the PAC request is the authorised account holder would add complexity and costs to the Auto-Switch design.

Ofcom's assessment

A2.31 We disagree that issues with switching products that offer multiple SIMs as part of one contract will arise under Auto-Switch in the way [§8] describes, for the following reasons:

- Where the legitimate account holder requests a PAC (via phone or online), the PAC will be issued in respect of the set of mobile numbers in question. Under Auto-Switch, the authorised account holder seeking to switch this type of product can either:
 - pass the PAC to their new provider at the point of sale. In this case the new provider will make the new SIMs available to the account holder (e.g. by post for an online sale), with each SIM already earmarked for re-route of the number to be ported. We would normally expect that where any SIM card is then activated, it will trigger the port to this SIM of the pre-earmarked number. In addition, it will trigger the deactivation of the set of numbers ported. To the extent that any remaining SIM cards have not been activated, the old service will nonetheless be deactivated (i.e. the old account will be terminated); or
 - pass the PAC to their new provider after they have received the new SIM cards. In this case, until the set of numbers is ported, the SIMs operate on (temporary) numbers. Since only the authorised account holder is able to request the PAC, it should be the account holder that passes the PAC to the new provider and instructs the provider to port the right number to the right SIM card. We also note that in these circumstances, Auto-Switch does not differ from current arrangements.
- Auto-Switch provides for the validation of requests for multiple SIMs or sets of numbers. For example, for a set of mobile numbers belonging to the same SIM group, only the authorised account holder is empowered to request a PAC. Where a member of this group who is not the account holder attempts to request a PAC/N-PAC, the provider should recognise this as a non-account holder and reject the request.¹⁶

Short codes

Respondents' views

A2.32 BT/EE told us that its subsidiaries PlusNet, BT Onephone and BT mobile do not currently have the technical capability to provide a PAC request via an industry short code, and that it would need to be developed.¹⁷

¹⁶ We have included the costs of this functionality within our modelling of the costs of Auto Switch within line items 2.2 and 19.5 – 19.5N.

¹⁷ BT/EE May 2017 consultation response, §88.

A2.33 Virgin said that standard industry processes for the short codes needed to be developed and that a mobile industry forum was best placed to do this.¹⁸

Ofcom's assessment

A2.34 We are aware that where a provider does not currently have the technical capability to provide an industry short code, it will need to develop this in order to meet requirements under Auto-Switch. We understand that such functionality is an industry standard and relatively straightforward to implement. We have taken into account the costs of doing so within our cost modelling.

A2.35 We agree that industry will need to agree on three standard short codes, which they should do during the implementation phase.

Compensation if the switch or cancellation takes more than one working day

Respondents' views

A2.36 Virgin noted our proposals include requirements on providers to pay compensation if the cancellation of the old service takes more than one working day, and that under current General Conditions, providers are required to complete a number port within one business day of a consumer's request to port their mobile number (GC18.3) and consumers are entitled to reasonable compensation where providers do not meet this requirement (GC18.9).¹⁹

A2.37 Virgin raised three points concerning our Auto-Switch proposals:

- It sought clarification on whether Ofcom proposes, under Auto-Switch, to go further than GC18.3 i.e. whether switches of mobile services (i.e. the cancellation of the old service and the activation of the new) not including a number port would nevertheless be subject to a GC requirement to be completed with one working day.
- It sought clarification on whether compensation is payable in the event a provider fails to provide a PAC/N-PAC rather than 'cancellation'. If the latter, Virgin argued it was not clear about the extent to which a consumer would be penalised were a provider to fail to cancel a consumer's contract in time, given that the use of the PAC/N-PAC under the Auto-Switch process effectively terminates the consumer's existing contract. Virgin said it considered, where the consumer's contract is erroneously not cancelled at the time of the port or switch, that the appropriate remedy should be the reimbursement of any subscription or airtime cost of those extra days rather than compensation (as the consumer has not been inconvenienced).
- It expressed concern about any provision to include businesses within the scope of any compensation requirements.

¹⁸ Virgin May 2017 consultation response, §14.

¹⁹ Virgin May 2017 consultation response, §35-§37.

Ofcom's assessment

- A2.38 We have judged in this Statement that consumer harm can result under current switching arrangements for switchers whether they port their number or not. We have designed process reforms to apply to, and protect both, porters and non-porters. In the latter case, the switching experience is characterised in part by the timetable for the cancellation and deactivation of the old service, and so is not presently covered by GC18.3.
- A2.39 In relation to businesses, and as we have already explained in Section 3 and 4 of the statement, businesses can suffer similar harm to residential consumers when switching, or considering switching, under current switching processes. Therefore, we consider it is appropriate to ensure businesses can benefit from the same reform as residential consumers. This also applies to compensation requirements.
- A2.40 To ensure equal protections are extended to switchers irrespective of whether they port a number or not, or whether they are businesses, we are extending the requirements and protections of GC18.3 (the timetable for porting, and cancellation) and GC18.9 (compensation) to switchers who do not port but who use Auto-Switch. Present arrangements for the payment and the level of compensation will therefore also be extended to those who switch but do not port.

Timing of ports

Respondents' views

- A2.41 [3<] said it favoured instantaneous processing of number ports, on the basis that consumers who re-contract with their existing provider can enjoy the benefits almost immediately. Switchers who port their number on the other hand need to wait to the next working day for the port to complete. This respondent noted that instantaneous number porting might well be beyond the scope of Ofcom's present mobile switching proposals and suggested that as an interim measure, Ofcom should require ports to be completed within 24 hours of request rather than by the next working day.²⁰

Ofcom's assessment

- A2.42 We have considered this suggestion on the porting timescale and agree that faster porting (including the associated and necessary re-routing activities) would provide a better and faster switching experience for consumers. We note that mobile operators have committed to working through their industry forum, the OSG, to streamline next day number porting (see Section 4) and so in the first instance we would look to operators to achieve a better switching experience in this regard.

²⁰ [3<] May 2017 consultation response [3<].

Service level parameters under General Conditions

Respondents' views

- A2.43 Virgin, SSE and [redacted] commented on or sought clarification about the service level parameters that providers would be expected to adhere to under Auto-Switch, specifically:
- Virgin noted that Ofcom is requiring under Auto-Switch that the PAC and ETC are generated immediately. It asked for clarity that we are not intending to shorten the current 2-hour window providers currently have to provide this information to consumers.²¹
 - [redacted] said it favoured comprehensive and precise Service Level Agreements (SLAs), for example that a consumer must be able to request and receive a PAC within 30 seconds, and the monitoring and publication of operators' compliance with such SLAs.²²
 - [redacted] also called for confirmation that the text and online PAC request methods will be available to consumers at all times ("24/7/365").²³
 - SSE suggested there is little resilience in the Auto-Switch option if there are IT issues compromising the delivery of the 'immediate' information.²⁴
- A2.44 TalkTalk also called for robust enforcement of GC requirements setting out providers' obligations relating to the timeliness of the delivery of the PAC/N-PAC.²⁵

Ofcom's assessment

- A2.45 We have designed the Auto-Switch process to deliver PAC/N-PAC and Switching Information 'immediately' in the case of residential consumers and within 2 working days for business tariff customers (where they request it by text or online).
- A2.46 In practice we believe it is reasonable to expect that requests for PAC/N-PAC will be delivered within 1 minute of a request in the case of residential customers, and we have set out this requirement in our General Condition requirements for Auto-Switch. Furthermore, we have clarified that the ability to request and receive these items by text or online must be available at all times.
- A2.47 As Virgin notes, our one-minute requirement for residential customers represents a reduction in the window currently allowed. Nevertheless, we consider that, under Auto-Switch, a consumer's switching experience will be significantly enhanced where the PAC, N-PAC or Switching Information is delivered immediately, and where text and online routes are available at all times. This meets our policy objectives of ensuring that consumers can exercise choice and take advantage of competition in communications markets by being able to switch provider without unnecessary difficulties, as we explain in Section 4, we consider that within 2 working days is appropriate for customers on business tariffs. We

²¹ Virgin May 2017 consultation response, §19.

²² [redacted] May 2017 consultation response [redacted].

²³ [redacted] May 2017 consultation response [redacted].

²⁴ SSE May 2017 consultation response, Appendix.

²⁵ TalkTalk May 2017 consultation response, §3.0.

consider that it is practical and reasonable for providers to do this, have designed Auto-Switch on this basis, and have not received any evidence that providers will be unable to achieve this.

- A2.48 We acknowledge that IT systems may be subject to instances of failure and downtime. Following discussions with mobile operators and our own technical advisors regarding the specification of Auto-Switch, we believe that sufficiently robust IT systems can be developed for Auto-Switch that minimise such risks. We also note that operators have the option to adjust or prioritise elements of their IT systems to meet requirements, for example by prioritising the delivery of the text containing PAC/N-PACs.
- A2.49 In undertaking any enforcement action where a provider is not delivering PAC/N-PACs according to GC requirements because of IT issues, we would expect to take account of providers' efforts to minimise disruption to consumers (for example undertaking routine maintenance work during low volume periods) and to expedite resolution of any IT issues.

Rejection of requests for PAC/N-PAC or Switching Information

Respondents' views

- A2.50 One respondent to our consultation, Deryck Chan²⁶, suggested that the circumstances in which a provider may reject a PAC/N-PAC or Switching Information were too vague²⁷. This respondent said that if the intention of allowing rejection of a PAC or Switching Information is to cater for business accounts and MVNOs who specialise in them, Ofcom ought to specify a definite range of circumstances in which requests for Switching Information requests may be rejected. Virgin also raised this issue, suggesting that the mobile industry needs to develop a standard process to explain to a customer the reasons for any rejection of a request for a PAC/N-PAC.²⁸

Ofcom's assessment

- A2.51 We agree that the conditions under which a mobile provider may reject a request for a PAC/N-PAC or Switching Information need to be clearly and carefully set out.
- A2.52 Auto-Switch will include all switches of sets of fewer than 25 mobile numbers and so include businesses where any request to switch falls within this threshold. In this case providers are not able to reject a PAC/N-PAC request on the grounds that the request comes from a business customer.
- A2.53 More generally, we note that the mobile industry has already agreed and set out, via the OSG, the circumstances under which a 'port' may be cancelled. This is contained in the mobile industry process manual for mobile switching and porting.²⁹

²⁶ Deryck Chan (Individual respondent) May 2017 consultation.

²⁷ See §6.40 and Figure 5 of the May 2017 consultation.

²⁸ Virgin May 2017 consultation response, §14.

²⁹ See: Mobile Number Porting Manual

http://www.mnpsog.org.uk/Main_Documents/MNP2%20Manual%20issue%201-32.pdf

A2.54 We expect similar reasoning to be extended to the treatment of requests and processing of N-PAC and Switching Information, and for the mobile industry to set out clearly the conditions for rejection of requests for these items.

Verification and fraud

Respondents' views

- A2.55 BT/EE³⁰ and O2³¹ reiterated their concerns regarding fraud and verification risks under Auto-Switch. BT/EE and O2 both noted that under current PAC switching arrangements, there is potential for fraudulent or unauthorised switching or porting to occur. O2 suggested that the current voice process delivers a level of verification and authentication which will be difficult to achieve through alternative options. BT/EE expressed concerns that Auto-Switch enables consumers to by-pass customer verification processes that currently take place when a consumer contacts their provider to request a PAC, in particular, that it increases the risk of unauthorised ports through CLI 'spoofing'³², where a fraudster disguises his/her number as the number to be ported when requesting a PAC. BT/EE said this could allow the fraudster to obtain a PAC without having the handset or possibly even the SIM.
- A2.56 BT/EE also noted that it had seen an increased incidence recently of attempts by fraudsters to take over consumers' online mobile service accounts, for example via web chat functionality or the deployment of 'malware' software to obtain customer data. It suggested this would allow the fraudster to obtain a PAC without having the SIM.
- A2.57 O2 noted that requests for a PAC by text under Auto-Switch rely on the request coming from the CLI (i.e. the mobile phone number) of the account holder in question and that O2 under present arrangements use this as one of a number of elements in making verification checks.
- A2.58 O2 also argued that Ofcom had not explained how the Auto-Switch proposal would reduce some risks of fraud under present PAC switching arrangements.
- A2.59 BT/EE and O2 both argued that, as a consequence, additional verification measures or approaches were needed under Ofcom's proposals. BT/EE suggested that:
- Following a PAC request by the consumer, the provider could send a verification message back, to which the consumer would need to respond before the PAC is sent;
 - Where a number is reported as lost or stolen, measures need to be in place to ensure that the SIM is replaced and registered to the number prior to a PAC being issued; and

³⁰ BT/EE May 2017 consultation response §11, §55, §78-§87.

³¹ O2 May 2017 consultation response §27, §29, §33, §44-§46, §55-§56, §61-§65, §67, §83-§84, §93, §104, §142-§150.

³² Calls and texts generally carry the phone number of the person calling, or the 'Calling Line Identity' (CLI) to the person or organisation receiving the call. However sometimes nuisance callers and criminals deliberately change the CLI, a practice known as 'spoofing'. They may do this with the intention of trying to hide their identity or to try to mimic the number of a real company or person who has nothing to do with the fraudster actually making the call or sending the text.

- Where the customer uses the online route for PAC request, the PAC could be sent by text to the registered mobile number on the account.

A2.60 BT/EE and O2 argued that increased risks of fraud will mean additional costs will arise as a result of either implementing additional safeguards or with remedying fraudulent or unauthorised switches. BT/EE also expressed concerns that the risks left mobile providers open to data protection related complaints to the Information Commissioner's Office (ICO).

Ofcom's assessment

A2.61 We agree that any switching mechanism should include effective mechanisms to ensure a request for a switch is made by the person authorised to do so. This is necessary to avoid slamming, erroneous transfers or more general fraudulent or mischievous attempts to switch service provider.

A2.62 In our judgment, Auto-Switch will provide sufficient safeguards in this regard and will not introduce new risks. This is for three reasons:

(i) Auto-Switch improves on the status quo

A2.63 Under the current PAC process for switching and porting numbers, providers verify PAC requests by phone and online account by asking consumers for personal details or online passwords. The PAC is provided to the 'requestor' via the means it is requested, e.g. over the phone.

A2.64 This means it is already possible in theory, under current switching arrangements, for a fraudster to request and obtain a PAC, where they are able to bypass verification questions. Under current arrangements, the authorised account holder would not be alerted to this via a separate text.

A2.65 Auto-Switch by contrast requires that any PAC/N-PAC is, at the very least, sent by text to the SIM (and therefore handset) of the authorised account holder³³. Hence the authorised account holder would be alerted to any fraudulent PAC/N-PAC request made by phone or online. They could then contact their provider about this. We consider that such a requirement is an improvement over the current practices of some providers.

(ii) Risks of SIM swap fraud are low under Auto-Switch

A2.66 Under SIM swap fraud, the fraudster seeks to organise a switch of a consumer's number from the consumer's current SIM card to one possessed by the fraudster. This might help the fraudster, for example, to gain control of the consumer's bank account where bank security verification codes are sent to the fraudulently ported mobile number.

A2.67 We do not think Auto-Switch significantly increases this kind of risk. To fraudulently port the consumer's number without the authorised account holder's knowledge, the fraudster would already need to be in possession of the consumer's SIM card, perhaps through theft.

³³ In the case of business customers who make the request by phone, Auto-Switch will work in the same way as current arrangements and so does not change the situation in relation to potential fraud.

Given that the fraudster would be in possession of the SIM, there does not appear to be a need for the fraudster to port the number in order, for example, to obtain bank security verification codes.

- A2.68 A fraudster would also have to wait at least to the next working day before the number could be ported to any SIM in their possession. This would give the authorised account holder time to report the SIM card as lost or stolen.

(iii) Risks of unauthorised acquisition of mobile numbers are low under Auto-Switch

- A2.69 We have also considered the risk that a fraudster may seek to take over or acquire a particular mobile number. The number may be valuable because it is highly memorable ('a golden number') or it may be known by valuable business customers e.g. it might help a taxi driver leaving permanent employment to set up alone.
- A2.70 We do not consider that Auto-Switch significantly increases this risk. As is the case for SIM swap fraud, any fraudster attempting an unauthorised acquisition of a mobile number would need to be in possession of the SIM. Were the fraudster to steal the handset to gain access to the SIM, it is likely that the authorised account holder would report a lost or stolen handset quickly, allowing any port to be investigated and halted.
- A2.71 Regarding BT/EE's specific point about CLI 'spoofing', we note that such practices would only enable a fraudster to disguise a request for a PAC/N-PAC. The PAC/N-PAC by the provider would in any event always be to the CLI and hence authorised account holder in question, who would be alerted about any request for a PAC/N-PAC made without his or her knowledge.
- A2.72 In our judgment, Auto-Switch is not likely to materially increase risks of fraud and in turn lead to material increases in costs for providers because of a higher incidence of reverse migrations. Where a number is reported as lost or stolen, providers should already have procedures in place to deal with this.

Third party intermediaries

Respondents' views

- A2.73 SSE noted that it was unconvinced we had fully considered how Auto-Switch could be used by comparison sites and other intermediaries to ensure swift and secure switching processes, and that intermediaries would find it difficult to integrate PAC-based LPL (i.e. our Auto-Switch reform) processes into their portfolios of switchable services, including for mobile services where they are part of a bundle. In particular SSE said this may be difficult as the 'immediate' response time would lie within the control of the losing provider. It argued that consumers may continue to see online switching as 'too much hassle' where the response time for PAC/N-PAC requests is longer than expected.³⁴

Ofcom's assessment

³⁴ SSE May 2017 consultation response page 3.

- A2.74 Comparison sites and TPIs already need to coordinate different services being switched as a bundle – it is not clear that Auto-Switch changes this to any significant extent.
- A2.75 Regarding views raised about any latitude for providers to exploit their role under Auto-Switch, by for example unduly influencing response times for return of a PAC/N-PAC, the GC sets out that providers must provide the PAC/N-PAC (or Switching Information) within one minute of receipt of request for customers on residential tariffs. For business customers, they will get the PAC/N-PAC immediately or within two hours when requesting over the phone, or within 2 working days when requested by text or online. However, we do not consider that SSE’s concern is particularly relevant to this set of customers.
- A2.76 Under Auto-Switch, we expect Third Party Intermediaries (TPIs)³⁵ to provide switchers the option of redeeming their PAC/N-PAC at the point of signing up to a new service. We also expect TPIs to provide consumers the same protections that regulated providers would provide, since TPIs facilitate the sale of contracts between providers and consumers. Hence providers will need to put in place arrangements with TPIs acting on their behalf (as new providers) to ensure compliance with the requirements arising from the Auto-Switch process.

Auto-Switch process flow diagrams

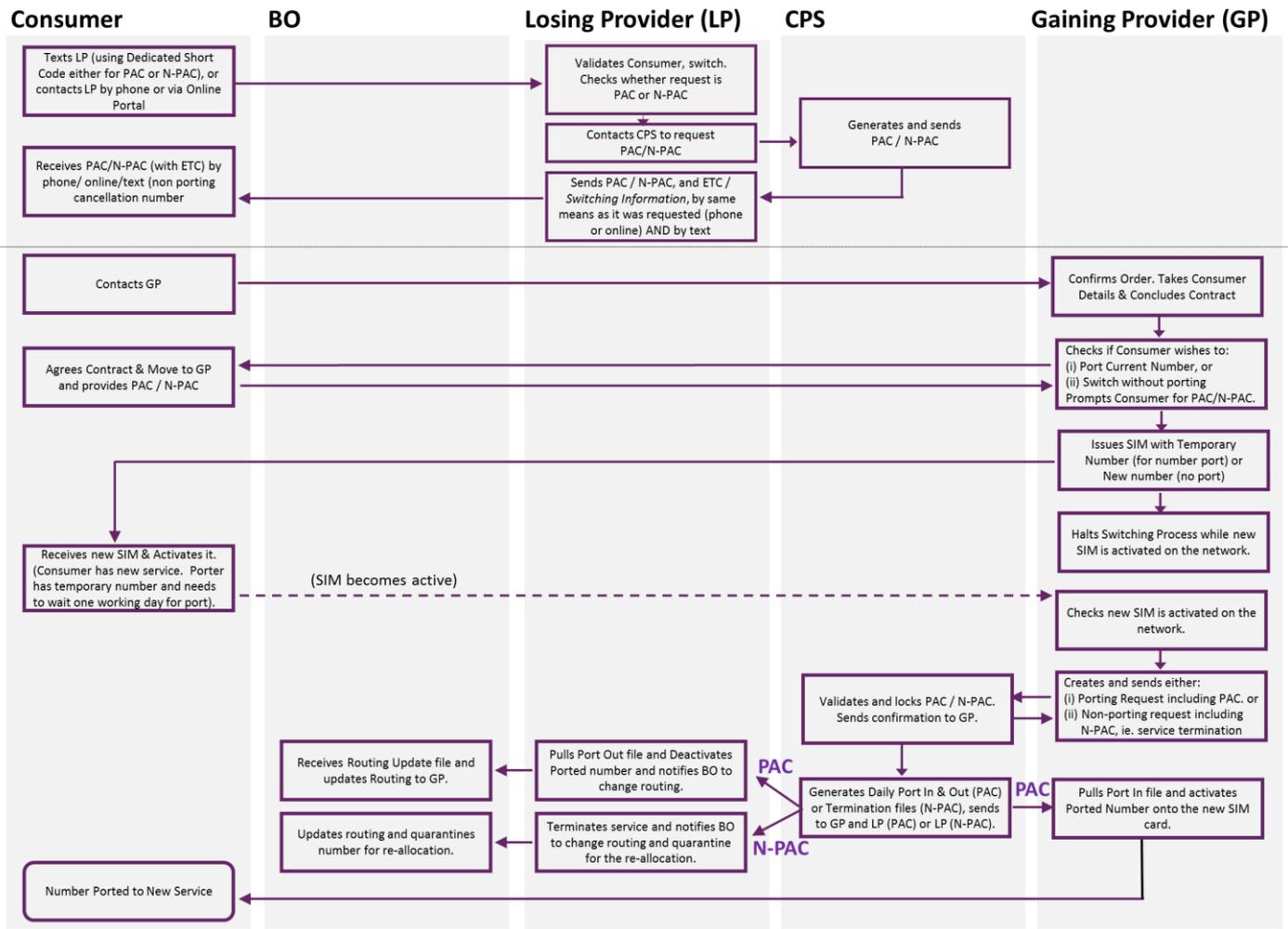
- A2.77 We set out in the following figures schematics of the interactions between the consumer, gaining provider, losing provider, block operator and Central Porting System (CPS) that will deliver Auto-Switch.
- A2.78 The figures relate to the following versions of Auto-Switch:

PAC and N-PAC port/cancellation process triggered by SIM activation	Figure A2.1
PAC and N-PAC port/cancellation process triggered by contacting gaining provider	Figure A2.2

³⁵ Third party retailers who sell or market mobile phone contracts on behalf of mobile providers.

Figure A2.1: PAC and N PAC port/cancellation process triggered by SIM activation

Auto- Switch (PAC/N-PAC with port/cancellation process triggered by SIM activation)

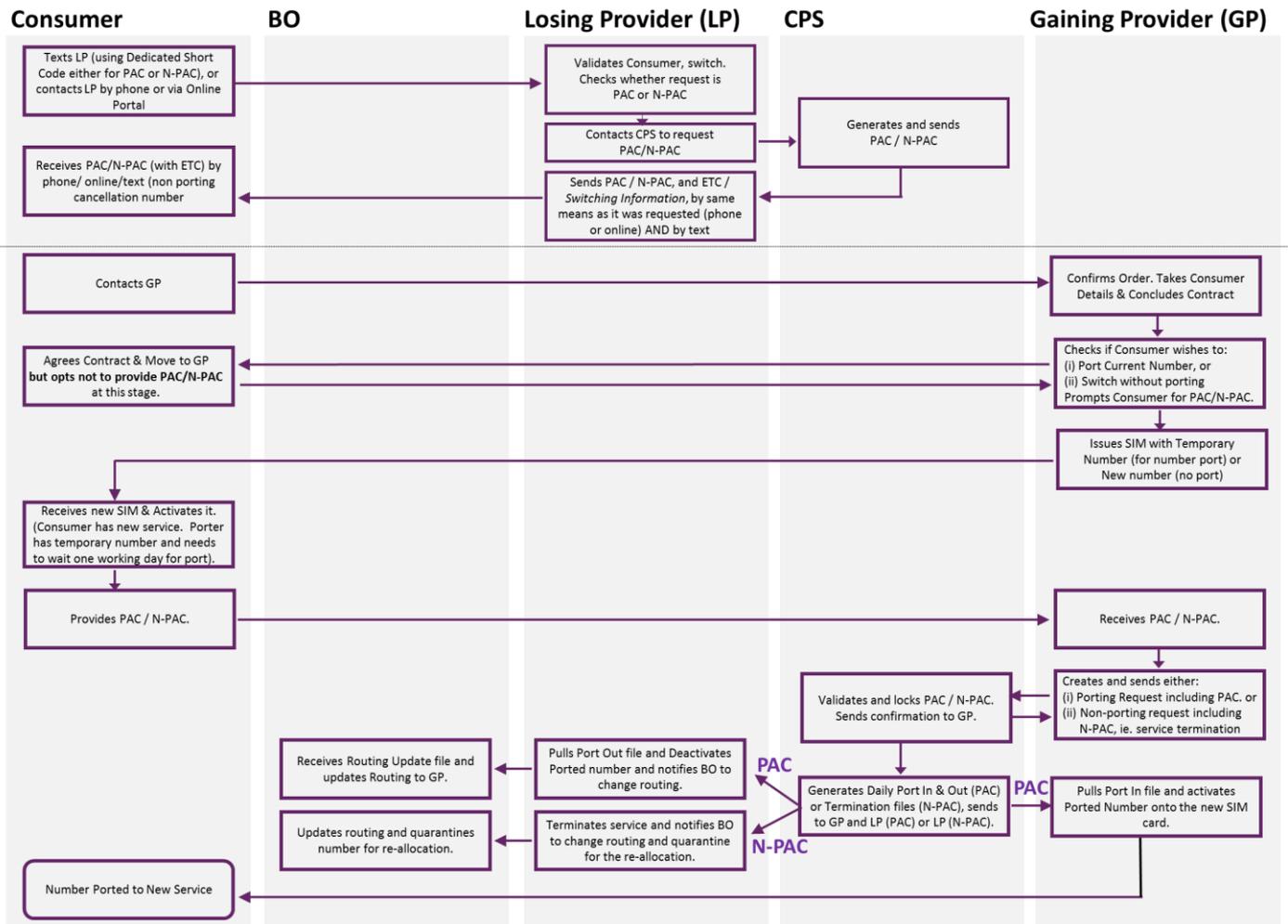


Annexes 2-11: Consumer Switching

Decision on reforming the switching of mobile communications services

Figure A2.2: PAC and N PAC port/cancellation process triggered by contacting gaining provider

Auto- Switch (PAC/N-PAC with port/cancellation process triggered by contacting GP)



A3. Estimated costs of implementation

Introduction

- A3.1 This annex sets out our estimates of the net cost to industry of implementing our package of reforms, i.e. introduction of Auto-Switch, prohibition on charging for notice after the switching date and transparency requirements. It also sets out stakeholder comments to our May 2017 consultation and our considered response.
- A3.2 We previously consulted on our estimates of the costs to industry of implementing mobile switching reforms in our March³⁶ and July 2016³⁷ consultations and in our January 2017³⁸ cost update.
- A3.3 Our May 2017 consultation set out our provisional ‘base case’ view that the net costs of implementing Auto-Switch³⁹ would be £43.9 million, the prohibition on charging for notice £9 million, and transparency requirements around £0.9 million (all costs on a 10-year NPC basis).
- A3.4 We have now confirmed our estimates of the net costs to industry of our package of reforms as follows (base case, 10-year NPC):
- Auto Switch (residential and business): £48.4 million
 - Prohibition on charging notice after switch date: £9 million
 - Requirements for transparency: £0.9 million
- A3.5 The remainder of this annex sets out our approach to estimating costs and our final view on the net costs of our package of reforms.

Approach to estimating costs

- A3.6 Our approach to estimating the costs to industry is based on an identification of parties in the mobile industry that we believe would need to undertake development work and investment and, where relevant, incur training and/or ongoing costs in order to implement our package of reforms. It is also based on modelling implementation costs by identifying, at a granular level, the items of development activities and investment we believe parties are likely to need to undertake, for their customer facing and other systems to deliver our required reforms.
- A3.7 The modelling does not specify or require that operators undertake these specific development activities or investments. Rather, we have set out our view of a reasonable

³⁶ March 2016 https://www.ofcom.org.uk/data/assets/pdf_file/0025/82636/consumer-switching-mobile-consultation.pdf

³⁷ July 2016 https://www.ofcom.org.uk/data/assets/pdf_file/0023/83453/Consumer-Switching-Further-proposals-to-reform-switching-of-mobile-services-July-2016.pdf

³⁸ January 2017 https://www.ofcom.org.uk/data/assets/pdf_file/0033/97179/Consumer-switching-Proposals-to-reform-switching-of-mobile-communications-services-Revised-cost-estimates.pdf

³⁹ The term “Auto-Switch” throughout this annex refers to the LP variant of Auto-Switch that we set out in our May 2017 consultation and provisionally concluded was our preferred option. In the same consultation we also set out the net costs for a second variant of Auto-Switch involving the CPS (Auto-Switch CPS) and a Gaining Provider led (GPL) option.

set of development activities and investments that we believe would enable operators to deliver our package of reforms and meet the requirements set out in the General Conditions. Operators are free to explore ways of delivering these requirements in ways that differ from the cost activities we have set out in our modelling.

A3.8 There are two key elements to our modelling of net implementation costs:

- the value chain – i.e. the parties in the mobile industry that may need to undertake development work. We have grouped mobile providers into five categories; and
- cost components – i.e. the individual activities, resources and costs that one or more parties will need to undertake. We note that our Auto-Switch reforms may enable some parties to save rather than incur some costs.

A3.9 We describe these below and provide our view on our approach. We also reprise the key findings on our cost modelling from the peer review exercise carried out by InterConnect Communications (ICC) and why we think it is relevant⁴⁰.

Value chain

May 2017 consultation

A3.10 We assumed in our May 2017 consultation (consistent with previous consultations) that 261 mobile providers would need to undertake development work and investment to implement our proposed mobile switching reforms. These are split among five categories of mobile provider: Mobile Network Operators (“MNOs”), large Mobile Virtual Network Operators (“MVNOs”), medium MVNOs, Mobile Virtual Network Enablers / Mobile Virtual Network Aggregators (“MVNEs”/ “MVNAs”), and small MVNOs.

A3.11 We assumed that mobile providers in each operator type category would be required, where relevant, to make similar changes to their own systems as a consequence of our proposed reforms, though the complexity and cost of these changes decreased with the size of the provider. We estimated therefore costs for:

- 4 MNOs: There are 4 mobile network operators in the UK, which have their own OSS/BSS⁴¹ systems and perform switching, billing and provisioning functions themselves. We assumed that MNOs also provide outsourced management of network routing, billing and provisioning to smaller MVNOs which do not have the scale to develop their own OSS/BSS systems, and would therefore make changes on their behalf.
- 11 large MVNOs: Mobile virtual network operators purchase wholesale network services from an MNO with network infrastructure, but they still all operate their own OSS/BSS systems. As such, we have assumed that large MVNOs would be required to make broadly the same changes as MNOs, though the development effort required is smaller (to reflect the smaller scale and complexity of systems, and the absence of legacy platforms).

⁴⁰ The report is available here: https://www.ofcom.org.uk/data/assets/pdf_file/0024/101994/ICC-report-on-cost-estimates.pdf

⁴¹ Operations Support Systems and Business Support Systems.

Annexes 2-11: Consumer Switching

Decision on reforming the switching of mobile communications services

- 6 medium MVNOs: These providers are sufficiently large to have their own OSS/BSS systems, and would therefore be required to make broadly the same changes as MNOs and large MVNOs, though the development effort required is again lower.
- 8 MVNEs/MVNAs: Mobile virtual network enablers/aggregators provide outsourced management of network routing, billing and provisioning to smaller MVNOs which do not have the scale to develop their own OSS/BSS systems, and would therefore be expected to make changes on behalf of their smaller MVNOs. We have assumed that MVNEs are similar in scale to medium MVNOs, but do not have any retail relationships with end users. The presence of MVNEs means that industry costs would be lower than if all small MVNOs had to incur the costs of making duplicative changes to their systems (as explained below).
- 232 small MVNOs (of which 163 serve only business customers). We derived this number by obtaining a list of MVNOs and MVNEs served by each MNO's network, and a list of MVNOs served by each MVNE. As set out above, these MVNOs often use MNOs or MVNEs to provide them with management of network routing, billing functions and provisioning on an outsourced basis.

A3.12 A related assumption regarding the value chain concerned our proposal under Auto-Switch that all consumers seeking to switch receive real-time Switching Information from their current provider. Consequently, one of the major cost activities for mobile providers is the development of functionality required to generate this real-time Switching Information.

A3.13 We set out our assumption in May that some smaller MVNOs would be able to meet the real-time information requirements in a cost-efficient manner by contracting with their upstream MVNO or MVNE providers to provide this information on their behalf. In this case, the costs of our reforms would be borne by a smaller number of upstream operators. We highlighted that, in order to estimate likely and reasonable implementation costs, we are interested in estimating the costs of one reasonable approach that would allow mobile providers to meet the proposed requirement, without having any adverse impacts elsewhere. We accordingly, for the purposes of estimating costs, assumed that most of the additional activities necessary to implement Auto-Switch would be undertaken by MNOs or MVNEs, on behalf of their small downstream MVNOs.

A3.14 We recognised that MNOs and MVNEs do not generally have the required visibility of smaller MVNOs' retail information to be able to generate and deliver this information on their behalf. Accordingly, we set out our assumption in May that smaller MVNOs would provide their MVNE with the necessary account details (contract start date, contract duration, and monthly airtime charge including handset if applicable) for each customer, and keep this information updated, so that the MVNE can calculate this information on their behalf.

A3.15 We also clarified in our May consultation that we are not specifying that small MVNOs must rely on their MNO or MVNE to provide Switching Information in this way. To the extent that small MVNOs choose to generate real-time Switching Information themselves, and deliver this information directly to the consumer, they could do this.

Annexes 2-11: Consumer Switching

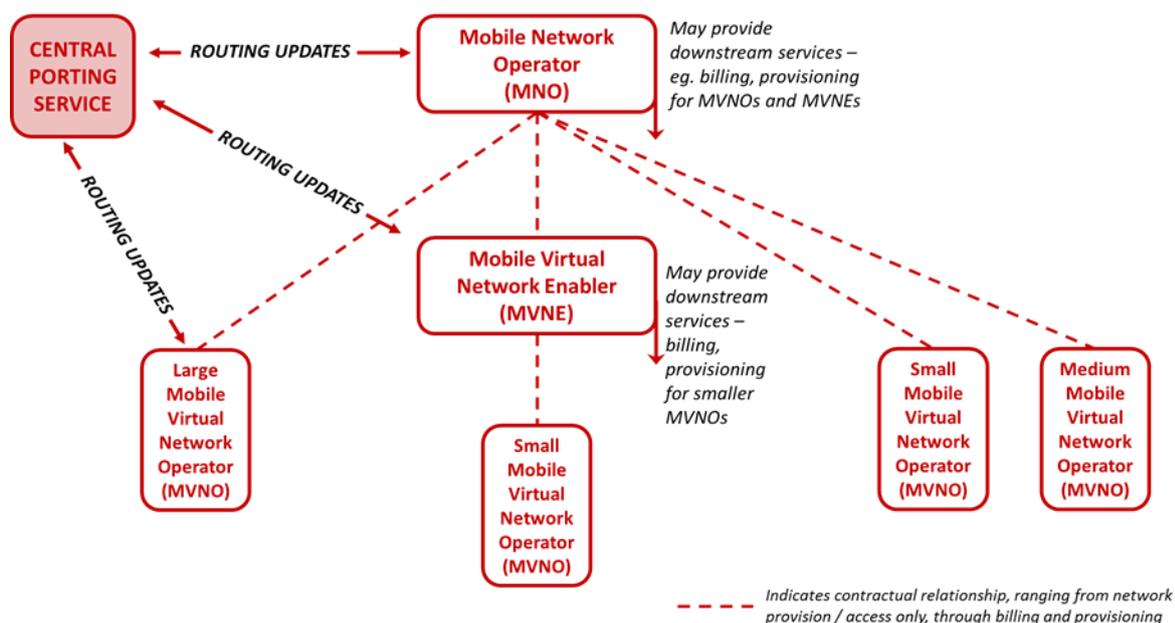
Decision on reforming the switching of mobile communications services

A3.16 We further assumed that implementation costs would arise for one specialist independent retailer.⁴²

A3.17 We noted the role of the Central Porting System (“CPS”), the centralised system which handles and processes switching and porting between providers. It authorises, allocates and manages PACs, and allows the exchange of porting data between operators but we assumed that, for the purposes of modelling the costs of our preferred version of Auto-Switch, the CPS would not need to incur additional costs.

A3.18 Figure A3.1 describes the simplified mobile value chain that we adopted in May to represent the industry participants.

Figure A3.1: Simplified mobile value chain



⁴² May 2017 consultation, §A8.13.

Stakeholder responses

- A3.19 A number of respondents to our May 2017 consultation submitted views on our assumptions about the value chain.
- A3.20 In relation to mobile operators:
- O2⁴³ said that we had underestimated the number of service providers who will need to undertake Customer Relationship Management system “CRM” developments and/or the development costs of establishing an ‘account management portal’ for smaller MVNOs or independent service providers. O2 also suggested⁴⁴ we had underestimated the technical and commercial complexity of MNOs making changes to support smaller MVNOs in our modelling assumption. It said this would require the sharing and exchange of customer information between smaller MVNOs / service providers and their host network operator.
 - [X] reiterated its view that our definitions of mobile providers do not reflect the diversity or complexity of the current mobile provider ecosystem.
 - TalkTalk⁴⁵ questioned whether Ofcom’s assumptions take sufficient account of the range of impacts on small MVNOs and resellers affected by Ofcom’s proposals. It asked Ofcom to review its assumption that MNOs and MVNEs would undertake a significant amount of the development of new functionality on behalf of their MVNOs.
- A3.21 We did not receive any direct submissions on the role of CPS. However, BT/EE⁴⁶ made a submission relating to the inclusion of non-porting switching in Auto-Switch, and how this would increase costs, which we consider has an impact on the role of CPS. We discuss this in paragraph A3.74 below.

Ofcom’s assessment

- A3.22 We recognise that there is significant variety in the precise nature of the relationship that each small MVNO has with its upstream MNO/MVNE, with some smaller MVNOs performing some of these functions themselves. Equally, we think it reasonable to assume that upstream MNOs and MVNEs would undertake a significant amount of the development of new functionality on behalf of their MVNOs. We would expect MNOs and MVNEs to develop and offer, on a commercial basis, relevant products to enable smaller MVNOs to meet relevant regulatory requirements, should this be the most cost-effective solution for the parties concerned.
- A3.23 We consider that in these cases, smaller MVNOs’ cost liabilities would be confined largely to providing support for testing and project management functions, as well as employee training. For the purposes of estimating costs, though, we have assumed that these entities have limited OSS/BSS systems themselves, meaning that most of the costs of our reforms would be incurred on their behalf by MNOs or MVNEs.

⁴³ O2 May 2017 consultation response §47 - §48.

⁴⁴ O2 May 2017 consultation response §48.

⁴⁵ TalkTalk May 2017 consultation response §4.7 - §4.8.

⁴⁶ BT/EE May 2017 consultation response §8, §57, §66 - §70.

- A3.24 Regarding O2's point, on the basis that we have assumed that service providers upstream of small MVNOs may need to undertake CRM developments and/or the development costs of establishing an 'account management portal' for smaller MVNOs, we think that our value chain would tend to overestimate rather than underestimate (and so tend to result in a higher, more conservative estimate of costs) the likely number of affected service providers.
- A3.25 Regarding O2's comment on the technical and commercial complexity of sharing customer information, our view is that the data set to be exchanged between upstream operators and smaller MVNOs is small and linked to any given CLI. We consider that the sharing and exchange of such a limited data set should not present significant technical complexity. Furthermore, we see no reason why commercial arrangements should be complex or insurmountable, given that similar arrangements between upstream and downstream operators are already in place, for example for the generation of PACs for customers.
- A3.26 We therefore consider that small MVNOs could reasonably comply with our proposed requirements to provide Switching Information as part of the PAC or N-PAC under Auto-Switch by contracting with their MVNE to automate and deliver this information on their behalf. For the purposes of deriving our cost estimates, we therefore assume that the costs to those small MVNOs providing residential services, would be largely confined to uploading relevant elements of data for each CLI to an MVNE account management portal, and keeping this information updated.
- A3.27 In relation to those small MVNOs serving business tariffs, we have described in section 4 that we are now of the view that it is unlikely to be necessary for businesses to receive a PAC/N-PAC and Switching Information in real-time and that an effective reform for businesses is for this to be provided within two working days of the text and online request. We consider that it is likely that this longer timeframe to provide a PAC/N-PAC and Switching Information would significantly reduce the costs to these operators, but we have not adjusted our cost estimates to account for this, as the magnitude of the cost savings is uncertain, for the reasons set out below.⁴⁷ However, as a consequence of this revised approach, we consider that implementation costs for small MVNOs serving business tariffs only would materially reduce.
- A3.28 Since May, and taking account of BT/EE's submission, we have refined our view of the development activities that the mobile industry may need to take in order to accommodate non-porting switchers within Auto-Switch. As a result, we have expanded the number of cost activities that we think mobile operators may need to undertake in order to implement Auto-Switch and the N-PAC functionality (described in detail below).
- A3.29 We also now consider that the CPS will need to carry out certain additional functions to process N-PAC requests, including that the CPS will need to undertake development work and incur costs to:

⁴⁷ A longer timeframe would mean that small MVNOs could calculate the implications of switching manually – as they do now during a phone request for a PAC – rather than invest in an automated process, with or without an upstream MNO or MVNE providing the relevant functionality.

Annexes 2-11: Consumer Switching

Decision on reforming the switching of mobile communications services

- include N-PAC code function;
- provide N-PAC on request from the losing provider;
- offer modified N-PAC locking and losing provider deactivation file generation functionality;
- enable N-PAC specific Inter-operator testing; and
- undertake N-PAC specific training.

A3.30 In light of these points, we have amended our value chain assumption to include the CPS as a result of the additional costs required to include N-PAC functionality for Auto-Switch. We have not made any other amendments to the value chain and have therefore modelled updated costs on the basis of the following value chain components:

Figure A3.2: Mobile value chain

Operator type	Number	Operator type	Number
<i>CPS</i>	1	<i>Small MVNO</i>	232
<i>MNO</i>	4	<i>(Business-only)</i>	(163)
<i>Large MVNO</i>	11	<i>MVNE</i>	8
<i>Medium MVNO</i>	6	<i>Specialist independent retailers</i>	1

Cost components

A3.31 Our May consultation set out our approach to identifying and costing the development and investment activities that the parties identified in the value chain would need to take in implementing Auto-Switch and the prohibition on charging for notice. These included:

- setup costs – we assumed our reforms would require mobile providers to incur incremental (one-off) setup costs;
- training costs – we assumed our reforms would require relevant staff of mobile operators to be trained on the new requirements;
- ongoing costs- the incremental operating costs associated with the new functionality;
- cost savings - we set out that under Auto-Switch, operators would make ongoing savings from fewer customers contacting them to request a PAC or terminate their service. These savings could offset gross implementation costs to some extent; and
- time horizon and discounting approach.

A3.32 In relation to transparency requirements, our May consultation set out our view that only set-up costs would accrue to providers.⁴⁸

A3.33 We set out below our considered view, taking into account stakeholder responses for each of the above.

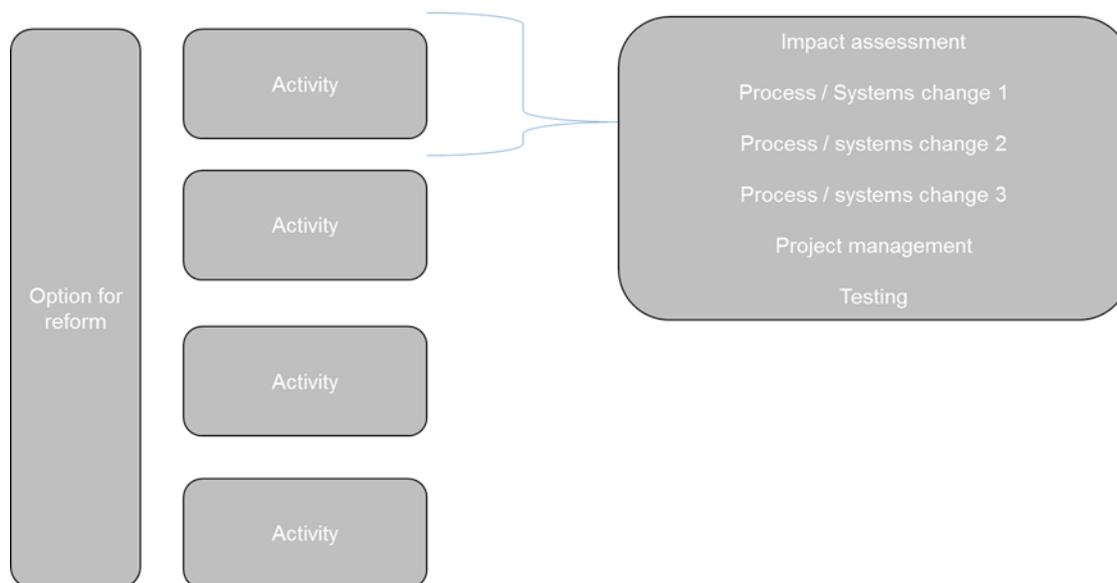
Setup costs

A3.34 We have taken a “bottom-up” approach to estimating set-up costs for a typical operator, as set out in Figure A3.3 below. The Auto-Switch and prohibition on notice period reforms comprise several activities⁴⁹, which represent the broad categories of additional functionality that are necessary to implement a reform. For each activity, we have assumed there needs to be: i) an impact assessment to determine scope and requirements of the change; ii) a series of systems or process changes to OSS/BSS systems; iii) a testing phase, to ensure that the changes have been successful and are compatible with existing business systems prior to the new system going live; and iv) project management.

⁴⁸ May 2017 consultation, §A8.74-§A8.75.

⁴⁹ We refer in this annex to cost activities i.e. the individual development and investment activities we have assumed operators will undertake to implement our reforms.

Figure A3.3: Illustration of bottom-up cost approach



A3.35 We have estimated the cost of each of these sub-activities by assigning an appropriate resource, and estimating the number of development days required to complete the sub-activity.⁵⁰ In addition, we have estimated the daily cost of relevant resources as follows:

- Internal resource: Salary assumptions are based on stakeholder comments from [redacted] received as part of our discussions with stakeholders during Autumn 2016. The daily cost is calculated by applying a 60% uplift on salaries to take account of other employee costs such as pensions.
- External resource: We assume a day rate of £750 for external vendor development work, based on stakeholder comments from [redacted]. We cross-checked this with submissions from [redacted], in relation to our earlier work on triple-play switching processes, on the daily cost of external resource for similar work.⁵¹

A3.36 Where possible, we have used estimates of actual (rather than typical) setup costs. This is where stakeholders have provided us with their own estimates of the cost that they would incur to implement our proposals, or specific reasons why their implementation cost would be significantly different from a typical operator. We received such information from the following providers: [redacted], Vodafone and [redacted], and we took these into account in constructing our cost estimates set out in May.

A3.37 Where we do not have actual costs, we have modelled the costs of a 'typical' operator for each of the five mobile provider categories (MNO, large MVNO, medium MVNO, small MVNO, MVNE/MVNA), on the basis that, absent other information, this is our best estimate of the actual cost that would be incurred by industry providers.⁵² We have not

⁵⁰ We set out our development day assumptions in full in the Excel workbook that accompanies this consultation.

⁵¹ Ofcom's separate, now concluded, work on the reform of switching landline, broadband and/or pay TV between different platforms. See: https://www.ofcom.org.uk/data/assets/pdf_file/0013/104503/Decision-on-switching-between-platforms.pdf.

⁵² Recognising the variety in complexity of IT systems among different mobile providers.

used [X] own cost estimates as the basis for the cost incurred by other large MVNOs, because we consider that, [X] costs will not be particularly representative of other MVNOs in this category, and will more closely resemble the costs to an MNO. We note that [X] own cost estimates for Auto-Switch are comparable with our estimate of the costs of a typical MNO.

A3.38 In response to our May 2017 consultation [X] reiterated their view that they have three separate billing platforms (for PAYM, PAYG and business) and would incur three separate sets of development costs for certain activities (e.g. the functionality to develop real-time ETC information). [X] recognised that there could be some common functions that would have a single cost (e.g. setting up SMSC connections). [X]⁵³ said that they accordingly expected their implementation costs for the elements of Auto-Switch related to their three billing platforms, subject to some adjustments, to be around £3.75 million. [X] did not specify the basis of its £3.75 million figure or the nature or scale of the possible adjustments.

A3.39 For this reason, we have instead modelled costs by [X].⁵⁴

Training costs

A3.40 In our May 2017 consultation we assumed that Auto-Switch and the prohibition on charging for notice requirements would require providers to incur one-off training costs to ensure that employees can understand how the new processes affect their roles.

A3.41 We did not receive comments from stakeholders that have caused us to change our assumptions about training. However, we have now included training for the CPS as a result of the additional role we now believe the CPS will play in relation to N-PAC requests.

A3.42 The training cost comprises four elements: i) an impact assessment; ii) preparation of training materials; and the delivery of training, which is split between iii) the training team and iv) the employees being trained, the cost of which we value at employees' hourly salary. The bulk of the training cost relates to Customer Service Agents (CSAs) who assist customers with switching.⁵⁵ Our assumptions are set out below.

A3.43 In terms of the number of CSAs to be trained:

- For MNOs, we have calculated a subscriber-adjusted average based on actual information from a subset of MNOs (16,250 CSAs).⁵⁶ This includes CSAs directly involved in switching, as well as other agents (e.g. retail or sales agents) that stakeholders told us would need to be made aware of changes.⁵⁷

⁵³ [X] May 2017 consultation response [X].

⁵⁴ In our costs workbook accompanying this consultation, we set out the full list of activities that we consider would be duplicated for each billing platform.

⁵⁵ We have also assumed some training cost for IT engineers and billing administrators.

⁵⁶ [X] collectively have [X] CSAs and a [X] share of MNO mobile subscribers. Assuming a constant ratio of CSAs to subscribers for the other MNOs, this implies that the total number of CSAs employed by the four MNOs is 65,000, or 16,250 each on average.

⁵⁷ This takes account of EE's point that, for some CPs, the population of advisers dealing with mobile may also include broadband and telephony CSAs, increasing the cost of training. EE January 2017 cost update response, page 8.

Annexes 2-11: Consumer Switching

Decision on reforming the switching of mobile communications services

- For large and small MVNOs, we have based our assumption (4,000 and 20 CSAs respectively) on stakeholder comments. For medium MVNOs, we have made an assumption based on their relative size (500 CSAs).

- A3.44 We further assumed that all CSAs directly involved in switching would undergo two hours' classroom-based training for Auto-Switch, and that "other" CSAs would require less training (i.e. 20 minutes), as they would only need to be made aware of the changes. Based on the ratio of the number of CSAs in each group, which is roughly 2:1 among stakeholders who submitted information, this works out at an overall average of 1.4 hours per CSA for Auto-Switch.
- A3.45 We also consider that a 20-minute briefing would be sufficient for all CSAs to understand the implications of prohibiting charging notice after the switching date.
- A3.46 We have summarised our assumptions regarding training needs for the five typical mobile operator categories in Figure A3.4 below. We note that these assumptions apply to a typical provider; for [X] itself, we have included the training cost that it said it would incur (i.e. 5 hours' training per CSA).

Figure A3.4: CSA training cost assumptions for a typical provider

	Number of CSAs	Number of hours training per CSA ⁵⁸	
		Auto-Switch	Prohibiting charging for notice
MNO	16,250	1.4	0.33
Large MVNO	4,000	1.4	0.33
Medium MVNO	500	1.4	0.33
MVNE	0	N/A	N/A
Small MVNO	20	1.4	0.33

- A3.47 Finally, we have assumed that one trainer can train 12 employees at any given time, so the FTE training team resource allocated to training delivery is one twelfth of the total training time incurred by all employees.⁵⁹
- A3.48 As we noted above, we believe that the implementation of Auto-Switch to include the functionality for non-porters to switch using an N-PAC code, will also result in the CPS undertaking certain development activities and incurring costs. Part of these costs will

⁵⁸ May 2017 consultation §A8.27 provides further details.

⁵⁹ In our January 2017 cost update, we calibrated training team resources using the assumption that one trainer can train approximately 10-15 employees at any given time. We understand that the current repatriations process does not necessarily involve the CPS.

relate to training of IT systems staff concerning the introduction and operation of the new CPS N-PAC functionality.

A3.49 We have assumed that this training will require 4 days (FTE) input from one middle management level employee with a project management role, to undertake an internal impact assessment. We have allowed a further 9 days (FTE) input from training team staff to develop and deliver the training, and 5 days for IT engineering staff to receive this training.

Ongoing costs

A3.50 We have estimated annual operating costs as follows:

- for setup cost activities which we consider are likely to attract additional ongoing support costs i.e. process and systems changes to OSS/BSS systems, which generally rely on external vendor support, we have applied a 15% ratio to the setup costs.
- for cost activities related to development work undertaken by the CPS, we have applied a 20% ratio to the setup costs.
- for internal impact assessments, testing and project management resources, we have assumed that these do not require annual operating costs, as these are one-off changes.
- for training costs, we have assumed that this is a one-off cost, for the reasons explained above.

A3.51 We consider that the 20% ratio is more appropriate in circumstances where new systems and hardware is being installed, which would require a new maintenance contract with a vendor, and so we have applied this ratio in respect of setup costs that arise for the CPS (i.e. in respect of introducing N-PAC functionality). Elsewhere, we are generally assessing the impact of making changes to existing OSS/BSS systems which should already have support processes in place, so we are only interested in the incremental increase in ongoing costs. In these cases, we consider that 15% is sufficient to reflect this increase.

Cost savings

A3.52 We explained in our May 2017 consultation⁶⁰ that it is appropriate to include provider cost savings from fewer calls made to the losing provider that are likely to result from our Auto-Switch process.

A3.53 O2, in response to our May consultation, said that, under Auto-Switch, industry would need to spend more on outbound retention measures and so Ofcom's anticipated cost savings would not materialise.⁶¹ O2 disagreed with our view that such retention measures costs are not a direct consequence of our reforms. O2 said that our approach in this regard

⁶⁰ May 2017 consultation, §5.74.

⁶¹ O2 May 2017 consultation response, §70.

was inconsistent, since we attribute improved save offers and competition benefits as unquantified benefits of reform⁶², but not the costs (i.e. outbound retention measures).⁶³

A3.54 We have considered O2's submission but we remain of the view that the extent to which providers may choose to deploy or redeploy customer service agents or activities towards enhanced retention activity or to realise savings will be a commercial decision for them. We would expect such commercial decisions to be made on the basis that they are incrementally profitable, and so we would not expect it to represent a net cost to providers.

A3.55 We set out below the basis for our calculation of cost savings. We assume that total staff cost savings are equal to the number of avoided calls/webchats to each losing provider, multiplied by the losing provider's cost per call/webchat (which is calculated by multiplying average CSA cost per hour by the average call/webchat duration in hours):⁶⁴

- Number of avoided calls/webchats: This is equivalent to the number of switchers who no longer contact their losing provider, as set out in Figure A5.4 of Annex 5.
- Customer Service Agent (CSA) cost per hour: we have assumed an hourly staff cost of £10.98. This was based on information from operators about the costs they incur in employing CSAs to handle PAC and termination requests.⁶⁵ It is inclusive of salaries, rewards, bonuses, pension, national insurance contributions and other benefits, but excludes any overhead apportionment. It is also weighted to reflect different levels of seniority of agent, and the split between UK-based agents and overseas agents. The estimate also assumes there are 228 working days per year.
- Time saved per call: we have set out the components of a PAC request or termination call that involve CSA time, and which are therefore relevant from the perspective of cost savings.⁶⁶ This is equivalent to components (b) and (d) to (f) in Figure A3.6 below. Our estimate of the time taken to traverse these components is as follows:
 - Regarding step (b), we estimate that these steps take 6.2 minutes for a PAC request and 5.9 minutes for a termination. We have based these estimates on information from operators about the time taken to complete step (b) (i.e. the time spent speaking to the switcher).⁶⁷
 - Regarding steps (d) to (f) - We also assume that CSAs spend time carrying out post-call activity (which is captured in (d) to (f) of Figure A3.6). Based on information available to us, we assume this takes around 18% of the actual conversation time, across PAC requests and terminations. Accordingly, we have uplifted mobile providers' time saving per avoided call by this amount.⁶⁸

⁶² May 2017 consultation, Figure 16.

⁶³ O2 May 2017 consultation response, §80-§81.

⁶⁴ March 2016 consultation, §A8.12.

⁶⁵ March 2016 consultation, Figure A8.6.

⁶⁶ March 2016 consultation, Figure A8.5.

⁶⁷ See May 2017 consultation, footnote 144.

⁶⁸ This is known as 'wrap time'.

Annexes 2-11: Consumer Switching

Decision on reforming the switching of mobile communications services

- Overall, therefore, we estimate that the total time saved per call/webchat to the losing provider is 7.3 minutes (PAC request) and 7.0 minutes (termination) under Auto-Switch.

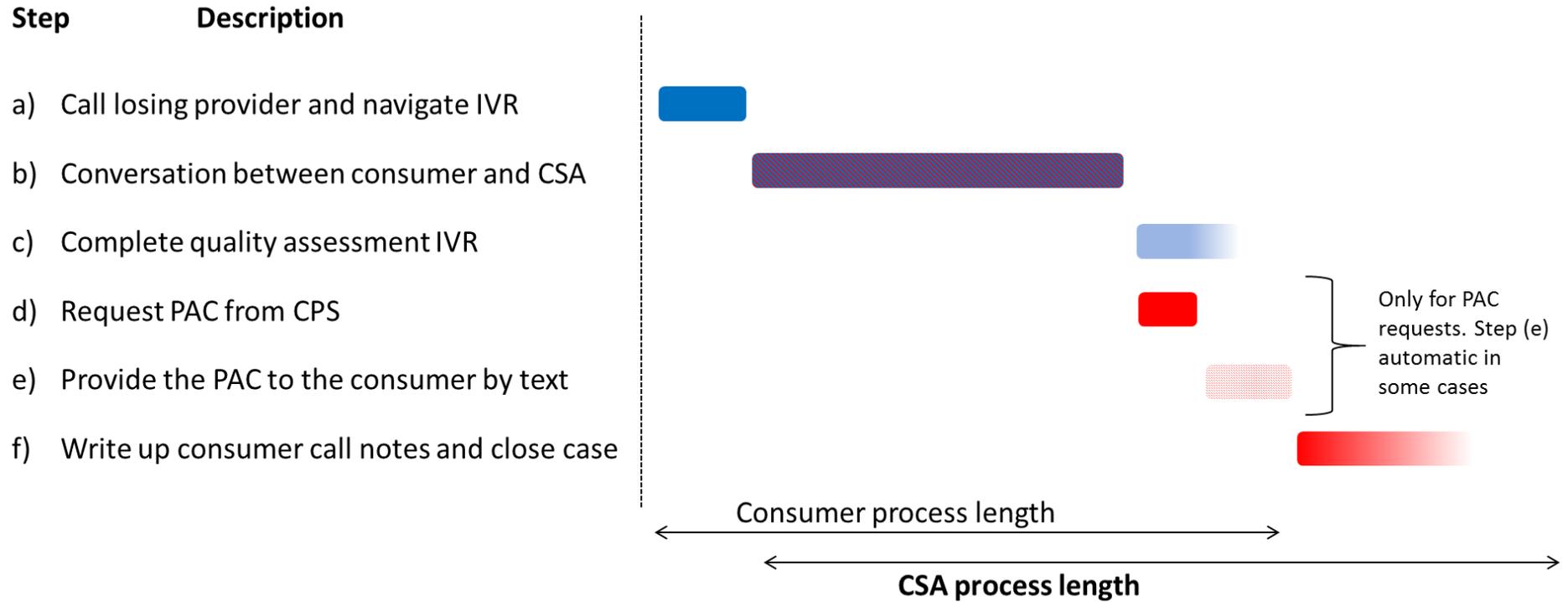
A3.56 Our estimates of the cost savings have not materially changed since May.⁶⁹ Figure A3.5 summarises our estimated cost savings from the Auto-Switch reform.

Figure A3.5 – Estimated cost savings from Auto-Switch

£ (million) 10-year NPC	Scenario	Auto-Switch Business and residential		Auto-Switch Residential only	
		Text only	Text and online	Text only	Text and online
		Cost savings	Low	13.7	14.8
	Base	16.3	17.7	14.2	15.4
	High	18.9	20.6	16.5	17.9

⁶⁹ We have set out the calculations on cost savings in the benefits workbook which sets out the benefits we expect to accrue to consumers from our reforms, and which accompanies this Statement.

Figure A3.6: PAC request process flow for consumers and customer service agents (CSAs)



Time horizon

- A3.57 We have estimated the impact of our reforms over a 10-year time horizon. Total industry cost comprises setup costs (incurred in year 1) and 10 years of operating costs and cost savings. We assume that the number of providers, number of consumers, and industry switching rate are all constant over the period.
- A3.58 In deriving the net present cost (NPC) of our cost estimates, we have used the Spackman⁷⁰ discounting approach. This is because the cost of implementation would fall on industry while the benefits accrue to consumers. We have applied the Spackman discounting methodology based on a financing cost of 7%.⁷¹ All other things equal, this approach increases the NPC of the reforms.

ICC peer review

- A3.59 In order to test our modelling assumptions, we commissioned ICC to peer review the cost estimates that were published as part of our January 2017 cost update.⁷² We published ICC's report alongside our May consultation.⁷³
- A3.60 ICC considered that the approach we had taken to cost modelling was reasonable. ICC also noted that our cost estimates are likely to be accurate to within $\pm 20\%$, and at best $\pm 10\%$.⁷⁴
- A3.61 O2 commented that there were reasonable grounds to suggest that our modelling approach underestimates the costs of implementing Auto-Switch. O2 also commented that our peer reviewer, ICC, had said that Ofcom's costs are "initial top-level estimates" and that "typically, following an impact assessment, initial outline plan effort estimates tend to increase".⁷⁵
- A3.62 We disagree that our modelling approach underestimates the costs of implementing Auto-Switch. We have taken ICC's findings on the accuracy of our estimates and carried out sensitivity testing in accordance with their recommendation.
- A3.63 Following our May consultation, we have made further revisions to the cost model. Given that our external peer review raised no issues of substance concerning our approach, and that we have not changed this in terms of the revisions we have made to the cost model,

⁷⁰ This approach involves discounting all costs (including financing costs as calculated based on a post-tax real WACC of 7%) and benefits at the Social Time Preference Rate (STPR).

⁷¹ This is the pre-tax real WACC used in our 2015 MCT statement. See §7.46,

https://www.ofcom.org.uk/data/assets/pdf_file/0029/76385/mct_final_statement.pdf

⁷² See https://www.ofcom.org.uk/data/assets/excel_doc/0015/82221/mobile-switching-costs-to-industry.xlsx

⁷³ The report is available here: https://www.ofcom.org.uk/data/assets/pdf_file/0024/101994/ICC-report-on-cost-estimates.pdf.

⁷⁴ ICC said this should not be interpreted as being 10% or 20% 'out' but rather should be seen as tolerance applied to the confidence of the estimate.

⁷⁵ O2 May 2017 consultation response, §48.

we consider our updated cost model is consistent with ICC's review and have not sought further external peer review of our modelling approach.

Net cost of our package of reforms

A3.64 We set out below the net cost⁷⁶ for each of our reforms: Auto-Switch, prohibition of notice period charges beyond the switch date and transparency requirements.

Auto-Switch

May 2017 consultation

A3.65 Our May 2017 consultation presented our estimates of the gross and net costs to industry of implementing Auto Switch⁷⁷. For our Auto-Switch reform we also presented costs for versions which included businesses, and an online option.

A3.66 We assume that Auto-Switch would require providers to undertake the following activities:

- Setting up Short Message Service Centre (SMSC) connections to the PAC request short-code.
- Developing the functionality to generate real-time ETC information.
- Delivering this information either to the CPS, or the consumer via text or the online account.
- Inter-operator testing.
- Updating CRM systems to allow cancellations to be initiated.
- Developing the functionality to allow PAC requests via online accounts.
- Redesigning online accounts to present ETC information.
- Training.

A3.67 Our May 2017 consultation also clarified and confirmed a number of aspects to our modelling of cost activities for Auto-Switch as follows:

- Operator specific costs - We had taken account of actual cost estimates for mobile providers, where they had been presented to us. We also added the costs incurred by specialist independent retailers. We assumed that only one such retailer would make these investments.
- Automatic initiation of port / cancellation - We included costs for providers to automatically initiate port / cancellation requests upon activation of the new SIM⁷⁸.

⁷⁶ Net industry cost is calculated as the sum of incremental setup costs and the difference between incremental operating costs and cost savings, aggregated across all affected entities, and discounted over the relevant time horizon.

⁷⁷ We did this for the LP and CPS variants of Auto-Switch as well as GPL.

⁷⁸ Cost Activity 15. *Develop functionality to automatically initiate port / cancellation requests once SIM is activated.* Previously, this functionality and cost was only included as part of our GPL process.

- Costs of generating real time ETC information - We considered the estimated cost to MNOs of generating real-time ETC information was a reasonable estimate of the average cost.

Stakeholder responses and Ofcom's assessment

A3.68 In response to our May 2017 consultation, stakeholders raised a number of points regarding our estimation of the costs to industry of implementing Auto-Switch. These included submissions on the costs of including N-PAC functionality, businesses, the automatic triggering of the switch following SIM activation, recognition and rejection of unauthorised PAC and N-PAC requests, and switches of sets of 2 or more mobile numbers.

N-PAC functionality

- A3.69 BT/EE⁷⁹ argued that including functionality within Auto-Switch for non-porters, i.e. the functionality to provide and process N-PAC requests, almost doubles the implementation costs for Auto-Switch.
- A3.70 We have considered BT/EE's comment in the light of our view of the cost Activities we set out in May which we thought would be sufficient to deliver Auto-Switch for both porters and non-porters. We are now of the view that additional Activities, compared to the ones we identified and set out in May, will also be required to ensure Auto-Switch can accommodate non-porters and the processing of N-PAC requests. We have accordingly further refined our modelling of the costs to implement the functionality for N-PAC requests under Auto-Switch.
- A3.71 As a result, we have supplemented the following cost activities for the typical operator types (as set out in the cost model spreadsheet):
- Activity 1: Set up Short Messaging Service Centre (SMSC) connections: we have identified that operators will need to undertake additional systems development to ensure that the SMSC connections necessary for Auto-Switch can also handle N-PAC codes. We think MNOs, large and medium MVNOs, and MVNE/MVNAs will incur these costs.
 - Activity 3: Functionality to deliver PAC and ETC/credit balance to consumers via text. We have identified that all operator types are likely to incur additional costs to ensure that Switching Information is delivered along with the N-PAC code.
 - Activity 5: Inter-operator testing: We have identified and included additional costs relating solely to inter-operator testing to deliver N-PAC functionality. Costs arise in this category for all operator types.
 - Activity 15: Develop functionality to automatically initiate port / cancellation requests once SIM is activated. We have identified and separately set out additional costs for new (gaining) providers to initiate automatically the cancellation of the consumer's old

⁷⁹ BT/EE May 2017 consultation response, §57, §62-§63.

service where the N-PAC is used. MNOs, large and medium MVNOs, and MVNE/MVNAs will incur these costs.

- Activity 17: Establish Small MVNO Porting Portal. We have identified and separately set out additional costs in respect of the portal for small MVNOs to initiate new cancellation requests and to notify port outs in respect of use of N-PAC. Given that cost Activity 17 concerns the portal for small MVNOs to communicate with MNOs and MVNE/MVNA, these additional costs arise only for these three operator types.
- Activity 19: Develop PAC request via online account. We have identified that all operator types are likely to incur additional costs so that N-PACs can be requested and delivered via online accounts.

A3.72 We have also identified an additional cost activity concerning the need for operators to update BSS and back office processes where they are the losing provider processing N-PAC deactivation files. We have included these activities under a new cost Activity 22. We think such costs will arise for all five operator types.

A3.73 We have clarified cost activity 16: Update GP CRM systems. Our May 2017 consultation identified cost activity 16 as necessary to enable the cancellation of the old service once the new provider received an N-PAC. We have clarified that this cost activity applies only in respect of providing N-PAC functionality.

A3.74 We have also identified and included costs for the CPS processing N-PACs. Our May 2017 consultation suggested that our Auto Switch LP variant would not need to involve additional CPS costs, because requests for PAC/N-PAC and the dispatch of texts would be handled by the losing provider. We further assumed that no additional costs would arise for the CPS because it would, as under the status quo, simply continue to accept and process requests for PACs and, under Auto-Switch, N-PACs. We are now of the view that some additional costs will arise for the CPS when accepting and processing requests for N-PACs, i.e. as a consequence of Auto-Switch. We have accordingly separately identified and included these additional cost items in our modelling.

A3.75 As a result of the inclusion of these additional implementation activities for N-PAC, we now consider we have sufficiently costed for the development activities necessary for Auto-Switch to accommodate the processing of N-PAC requests by both losing and gaining providers.

Inclusion of business customers

A3.76 TalkTalk submitted⁸⁰ that it would need to make major changes to include business switches within Auto-Switch. These changes included establishing a text system and systems integration with the CPS to deliver the immediate PAC and N-PAC functionality.

⁸⁰ TalkTalk May 2017 consultation response, §4.7 - §4.8.

- A3.77 In relation to businesses, as set out in Section 4, we have revised the requirements so that the PAC/N-PAC and Switching Information must be provided within two working days of the text and online request, instead of immediately as required for residential consumers.
- A3.78 Consequently, for some small MVNOs, it is possible that they may incur no incremental costs at all under our reforms, if they already provide online accounts to their customers, and they can easily adapt current procedures to meet our obligations. For some other MVNOs, they may still need to incur the same level of costs we have estimated to meet the residential consumer requirements, which includes the costs of establishment of the text system and systems integration with the CPS. It is difficult to estimate what proportion of business only small MVNOs are likely to fall into these two groups, as it depends substantially on whether online accounts are already provided to their customers and how they decide to deliver the PAC/N-PAC and Switching Information, though we would expect the majority to have lower incremental costs as a result of our revised requirement.
- A3.79 We have not therefore updated our cost estimates to take into account the longer timeframe we have allowed for the provision of this information, but were we to do so, we expect that it would reduce estimated implementation costs across all small MVNOs by several million.⁸¹

Automatic triggering of the switch following SIM activation

- A3.80 BT/EE⁸² said that inclusion within the Auto-Switch process of the automatic triggering of the switch following SIM activation would require changes to all sales channels and a large number of internal processes and so would increase implementation costs. Virgin said that there would be considerable additional costs from a gaining provider perspective to ensure that at every sales point the customer can provide their PAC/N-PAC and that this is activated as part of the switching process on a specific date.⁸³
- A3.81 We agree that functionality to automatically trigger a switch following SIM activation is likely to add some complexity and so increase implementation costs. We have reflected these under cost Activity 15⁸⁴ in our modelling. We have furthermore, as set out above, included additional items in respect of these costs for delivering N-PAC functionality.
- A3.82 It is unclear that sales channels or processes need to be changed or that further costs arise with automatic SIM activation. We note that there may be a need for providers' CSAs to be aware of this, and we have taken into account the need to train CSAs in our cost modelling.

⁸¹ We have however amended our estimates of the costs that might apply to small MVNOs serving business only tariffs where Auto-Switch applies only to residential tariffs. In our modelling presented in May, we assumed that such businesses would incur some costs associated with training. We no longer think that such businesses would need to additional costs, were Auto-Switch to apply to residential business only, and so we have removed these.

⁸² BT/EE response to May 2017 consultation §57, §66, §71, §108.

⁸³ Virgin response to May 2017 consultation

⁸⁴ Cost activity 15: Delivering functionality to automatically initiate port / cancellation requests once SIM is activated.

We further note that respondents have not identified new cost activities associated with automatic SIM activation nor have they put forward new cost estimates.

Recognition and rejection of unauthorised PAC and N-PAC requests

- A3.83 [X] noted that in some switching scenarios, such as where a customer holds [X], [X] cannot tell if the person requesting a PAC/N-PAC by text is the authorised account holder or not. They said that building in functionality to detect whether the PAC requestor is also the account holder would add complexity and cost to the design.⁸⁵ [X] reiterated this point for business switchers, noting that a user of a company mobile service may not be authorised to request a switch. [X] also went on to note that where it acts on behalf of a downstream reseller, this process is subject to risk as it relies on the upstream provider receiving correct information from the downstream reseller about which end consumers are or are not the authorized account holders.⁸⁶
- A3.84 We recognise that under Auto-Switch, losing providers will need to validate and if necessary reject any unauthorised PAC or N-PAC requests, including where these are made in a multi-SIM environment. We have accordingly reflected development activities both for account validation by the losing provider⁸⁷ and to accommodate requests for switches of multiple numbers.⁸⁸ As set out above we have where relevant added cost items in respect of N-PAC functionality.
- A3.85 Regarding [X] point about accuracy of data provided to any upstream operator acting on behalf of a downstream reseller, we would expect in the first instance that the two parties enter into suitable commercial contracts that set out relevant obligations, including in respect of data accuracy. We further note that our revised requirements in respect of how Auto-Switch applies to switches by consumers on business tariffs means that operators serving such consumers only have increased scope to meet their requirements without pursuing arrangements with any upstream operator.

Switches of sets of 2 or more mobile numbers

- A3.86 Virgin said that our proposals to allow residential and small businesses to switch between 2 and 24 numbers would require extra functionality and so increase implementation costs.⁸⁹ Virgin said that they anticipated that material development work would be required to ensure that customers can, through their online account, (i) port all numbers under one PAC/N-PAC code, (ii) choose which numbers to port and which to leave with their existing provider, and (iii) aggregate all ETCs, loss of bundling discounts and handset loans into a single amount reflecting the customer's choice of which numbers to switch and which to leave.

⁸⁵ [X] response to May 2017 consultation [X].

⁸⁶ [X] response to May 2017 consultation [X].

⁸⁷ Within cost Activity 2: Functionality to develop real-time ETC / credit balance.

⁸⁸ For example, under cost Activity 19: Develop PAC and N-PAC request via online account.

⁸⁹ Virgin response to May 2017 consultation, §6.

- A3.87 Auto-Switch allows consumers to request a PAC/N-PAC for switches of a set of between 2 and 24 numbers via phone or online, but does not mandate this for requests by text. We recognise that such functionality will require development costs and we have reflected this in our modelling as set out in May.⁹⁰ Our costs include the possibility for consumers to select sub-sets of numbers to be ported from a larger set of numbers held under one account (described in our modelling as either ‘contiguous’ or ‘non-contiguous’).
- A3.88 We did not receive additional stakeholder comments on this issue, and we have not further adjusted our cost modelling in respect of this item.

Revised cost estimates

- A3.89 In the light of our considerations above, we have updated the cost model for Auto-Switch accordingly and published this alongside our Statement.⁹¹ We have made changes in respect of three principal items:
- N-PAC functionality - We have separately identified the cost items which are necessary to deliver N-PAC functionality, over and above that needed to deliver PAC functionality. The additional Activities we have added, in comparison to our May 2017 consultation and published model, are labelled with an “N”.⁹² We have included our revised view of the necessary development days associated with the N-PAC cost activities, and where relevant also adjusted the accompanying development days needed to deliver the cost activity in respect of PAC only.
 - Accordingly, the cost model sets out gross costs for Auto-Switch (PAC only) and Auto-Switch (PAC and N-PAC).
 - Small MVNOs serving business tariffs only should not incur costs where Auto-Switch applies to residential tariffs only.
 - We have made a small number of minor amendments to cost activities. These include clarifying, where relevant, that the employee type matches the operator type being modelled (for example we have for the “Large MVNO” typical operator type ensured that employee types where relevant refer to “Large MVNO CRM vendor”).
- A3.90 Figure A3.7 below summarises our view of gross costs, cost savings and net costs.

⁹⁰ Cost Activity 19: Develop PAC and N-PAC request via online account, including functionality to request a PAC or N-PAC for switching/porting two or more numbers (contiguous or non-contiguous).

⁹¹ We have simplified the published spreadsheet model so that it sets out estimated costs for Auto-Switch only.

⁹² For example, in the workbook accompanying this Statement, cost activities for the MNO typical operator include the line item 1.1N *Internal impact assessment - N-PAC Incremental*.

Figure A3.7: Auto-Switch, net cost to industry

£ (million) 10-year NPC	Scenario	Auto-Switch Business and residential		Auto-Switch Residential only	
		Text only	Text and online	Text only	Text and online
Gross costs ⁹³	Low	57.8	78.6	46.5	65.1
	Base	48.7	66.1	39.2	54.8
	High	39.6	53.6	32.0	44.6
Cost savings	Low	13.7	14.8	11.9	12.9
	Base	16.3	17.7	14.2	15.4
	High	18.9	20.6	16.5	17.9
Net cost	Low	44.1	63.8	34.6	52.2
	Base	32.4	48.4	25.0	39.4
	High	20.7	33.0	15.5	26.7

A3.91 Our net cost estimate for implementing our Auto-Switch reform (which includes business and an online route) is now £48.4m.

Prohibiting charging for notice after the switching date

A3.92 We explained in our May 2017 consultation that, our cost estimates of implementing a prohibition on charging for notice after the switching date were around £9 million (over 10 years in NPC terms).

⁹³ For gross costs, we have flexed setup costs by +/- 20% to generate low and high scenarios. This is based on feedback from ICC that the accuracy of our estimates is likely to be within a range of 10-20%.

- A3.93 In response to the May 2017 consultation, Vodafone commented that its implementation costs would be zero as they do not charge for notice periods, and that implementation costs for other providers would be low, i.e. less than £1 million.⁹⁴ BT/EE said they agreed with Ofcom's estimates of the costs for an MNO to implement notice period reforms.^{95, 96}
- A3.94 We have already taken into account that some providers do not charge for notice periods. We have not received submissions that have led us to alter our assessment of the costs of implementing the prohibition on charging for notice.
- A3.95 Consequently, our cost estimate remains at £9 million (over 10 years in NPC terms).

Improving transparency about the switching process

- A3.96 In our May 2017 consultation, we estimated that setup costs for our transparency requirements would be £30,000 for MNOs, £15,000 for large MVNOs, £5,000 for medium MVNOs and £2,000 for small MVNOs.⁹⁷ Our estimates of the setup costs for MNOs and large MVNOs include costs for the provision of new guidance on notice period charges, which we assume will be necessary to improve transparency.⁹⁸ Our estimates of total set-up cost across all operators was £0.9 million (in NPC terms over ten years).
- A3.97 We did not consider there would be additional ongoing costs associated with this requirement, as, once the new website pages and point of sale material have been developed, it is likely that ongoing costs to maintain this information would be negligible.
- A3.98 We received no comments in response to our May consultation and we therefore continue to consider that our estimates are reasonable at £0.9m (over 10 years in NPC terms).

⁹⁴ Vodafone May 2017 consultation response, page 20.

⁹⁵ In respect of PAC switchers.

⁹⁶ BT/EE May 2017 consultation response, §107.

⁹⁷ May 2017 consultation §A8.74.

⁹⁸ We estimated the cost of these as a standalone change in our July 2016 consultation. Here we assume that a single change would be made to consumer guidance to cover all aspects of the switching reforms.

A4. Likely costs and benefits of introducing our package of reforms

Introduction

- A4.1 This Annex sets out our assessment of the likely costs and benefits of implementing the package of reforms that we have discussed in Section 4. This helps us to inform our assessment of the proportionality of these reforms, which we consider in Section 5.
- A4.2 As set out in Section 4, we have developed a package of reforms designed to address the consumer harm we have identified. We consider that this package of reforms would effectively reduce switchers' experiences of:
- unnecessary time spent and difficulties involved in progressing the switch; and
 - unwanted double paying;
 - loss of service amongst C&R switchers.
- A4.3 By reducing these combined barriers to switching, these reforms should also deliver benefits to would-be switchers and competition.⁹⁹
- A4.5 We consider that it is appropriate to consider the benefits and costs of our package of reforms together, as it is the package of reforms that, in our view, will deliver a quicker and easier switching process and un-lock the benefits to would-be switchers and consumers more generally. We set out an overall analysis of the proportionality of our package of reforms in Section 5.
- A4.6 Nevertheless, for completeness and in light of some stakeholders' comments, we also present the impact, in terms of costs and benefits of implementing the reforms in three incremental stages.
- First, we assess the impact that prohibiting charging for notice after the switching date would have, were it to be introduced on a stand-alone basis i.e. absent any further reform¹⁰⁰.
 - Secondly, we assess the impact of introducing Auto-Switch on an incremental basis (i.e. over and above our notice period reform).¹⁰¹ In assessing Auto-Switch we focus in particular on the introduction of a text and online Auto-Switch process for both residential consumers and businesses, whether they want to port their number or not.

⁹⁹ Annex 8 discusses the benefits to would-be switchers and competition.

¹⁰⁰ We assess the impact of notice period reform first as it would in principle be possible to reform notice periods for existing PAC switchers, without the other Auto-Switch changes.

¹⁰¹ We have assessed the impact of introducing Auto-Switch over and above the prohibition on notice periods for existing PAC switchers. We do not think it is meaningful to analyse Auto-Switch without also assuming notice period reform, otherwise we would have designed our Auto-Switch proposals differently to address the risk that some switchers incur double-paying (as we did in our March 2016 consultation, §1.9). May Consultation, footnote 153.

- Thirdly, we assess the incremental impact of requiring consumer guidance about the switching process to be clear and accessible.¹⁰²
- Finally, we set out the overall impacts of introducing our package of reforms.

A4.7 Where possible, we have attempted to quantify these impacts. We have adopted a conservative approach to this quantification so that we are more likely to underestimate than overestimate benefits. There are some impacts that we consider important to the case for intervention which we have been unable to quantify. We take account of these non-quantified impacts in our overall assessment.

A4.8 In respect of implementation costs, before our May 2017 consultation we commissioned an independent consulting company (InterConnect Communications, or ICC) to peer review our cost estimates. ICC considered the estimates to be a reasonable forecast of the likely costs, and that setup costs are likely to be accurate to within +/- 20%. We take account of this in our assessment. We have also taken into account that we have revised our requirements for customers on business tariffs, and therefore our cost estimates are likely to overestimate costs (see below).

Prohibiting charging for notice after the switching date

May 2017 consultation

A4.9 In the May 2017 consultation, we consulted on a prohibition on providers charging for a notice period beyond the date that consumers switch or port out their mobile number. We estimated that, if this reform were applied to the current porting process, this could save PAC switchers around £8 million per year (£69 million over 10 years in NPV terms) in double-paying.^{103 104}

A4.10 This figure excluded any benefits that might accrue to existing C&R switchers. We said at that time that this was because any proposal to prohibit charging for a notice period beyond the switching date could only apply in the context of a formal switching process, so switchers who continued to switch using a C&R arrangement would still be subject to the risk of double-paying. However, we also noted that the reform had the potential to deliver additional benefits to these switchers if implemented in conjunction with our Auto-Switch reforms, which included provisions to simplify the existing PAC process and to extend the formal switching process to include switches without ports. We considered these benefits as an incremental impact of implementing Auto-Switch.¹⁰⁵

¹⁰² In May we also assessed the incremental impact of introducing centralised End-to-end management. As noted in Section 4, we have decided not to proceed with End-to-end Management at this time.

¹⁰³ We also said it would remove the time, effort and risks associated with managing contract overlap to avoid double-paying, as well as the need to defer the start of the new service to do so.

¹⁰⁴ See May 2017 consultation, §6.41 and footnote 238.

¹⁰⁵ See May 2017 consultation, §5.48.

- A4.11 We also re-iterated our view that notice period reform would also address the time and effort that some switchers spend managing contract overlap to avoid double-paying, as well as their need to accept an unwanted deferral of the start of the new service to achieve this. We said we considered these non-quantified benefits to be important benefits of the reform. We also noted that, by reducing barriers to switching, the proposal seemed likely to deliver benefits to would-be switchers and competition more generally.¹⁰⁶
- A4.12 Set against these benefits, we estimated that it would cost industry around £9 million (over 10 years in NPC terms) to implement this reform.¹⁰⁷

Stakeholder comments on prohibiting charging for a notice period after the switching date

- A4.13 In response to the May 2017 consultation, stakeholders did not comment directly on the level of our estimates of the costs to the mobile industry as a whole of implementing prohibiting charging for a notice period after the switching date. Vodafone commented that in its view costs would be low.¹⁰⁸ BT/EE said they agreed with Ofcom's estimates of the costs for an MNO to implement notice period reforms in respect of PAC switchers.¹⁰⁹
- A4.14 In respect of benefits, BT/EE agreed that there are benefits to addressing double paying for PAC customers because they stop receiving a service from their losing provider.¹¹⁰ However, they suggested that introducing an information remedy (rather than prohibiting charging for notice after the switching date) would be able to address double paying for PAC switchers.^{111 112}

Updated assessment of benefits and costs

Benefits

- A4.15 We have explained in Section 4 why we do not consider an information remedy would be effective at addressing the harm from double paying. We remain of the view that prohibiting charging for notice after the switching date would deliver a significant reduction in double-paying for PAC switchers, even if no further reforms were pursued. We continue to estimate that the reform would deliver a reduction in double payments for PAC switchers of approximately £69 million (NPV terms over 10 years). We set out the full details of this calculation in Annex 6.

¹⁰⁶ See May 2017 consultation, §5.41.

¹⁰⁷ See May 2017 consultation, §5.17.

¹⁰⁸ Vodafone May 2017 consultation response, page 20.

¹⁰⁹ BT/EE May 2017 consultation response, §107.

¹¹⁰ BT/EE May 2017 consultation response, §106.

¹¹¹ BT/EE May 2017 consultation response, §38.

¹¹² We also received some detailed points on the methodology we used to estimate the size of the double paying benefit and these are discussed in Annex 6 – Calculation of reduction in double-paying.

A4.16 We also remain of the view that our notice period reform would address the time and effort that some switchers spend managing contract overlap to avoid double-paying, as well as their need to accept an unwanted deferral of the start of the new service to achieve this. We consider these non-quantified benefits to be important benefits of the reform.

A4.17 Furthermore, by reducing barriers to switching, this proposal seems likely to deliver benefits to would-be switchers and competition more generally (see Annex 8).

Implementation costs

A4.18 We received limited comments on our estimate of the costs associated with implementing a prohibition on charging for notice periods after the switching date and we respond to stakeholder comments in Annex 3. Our estimate of the implementation cost is unchanged from that set out in our May 2017 Consultation at around £9 million (over 10 years in NPC terms).

Summary of impact of prohibiting charging for notice after the switching date

A4.19 Our analysis indicates that the quantified reduction in unwanted double-paying for PAC switchers significantly exceeds the implementation costs that mobile providers would incur, and this would be the case even if setup costs were 20% higher (i.e. around £10.5 million).¹¹³ The presence of important non-quantified benefits further strengthens this position.

Auto-Switch

May 2017 Consultation

A4.20 In May 2017 we identified three main benefits to switchers from the introduction of Auto-Switch ¹¹⁴:

- reduction in unnecessary time and difficulties progressing the switch;
- reduction in double-paying amongst existing C&R switchers; and
- reduction in loss of service amongst existing C&R switchers.

A4.21 In order to estimate the reduction in unnecessary time and difficulties progressing the switch we commissioned a survey (The 2017 BDRC research¹¹⁵) to specifically explore how much consumers who had previously switched using either PAC or C&R would use Auto-Switch (and also GPL) to switch, and whether consumers would still use it if they had to pay

¹¹³ Our independent peer reviewer (ICC) suggested that our setup cost estimates are likely to be accurate to within +/- 20%.

¹¹⁴ See Section 5 (Impacts from introducing our options for reform) from the May 2017 consultation.

¹¹⁵ See the 'Research documents' we published with this statement.

for it ('Willingness to Pay (WTP) questions').¹¹⁶ These questions were used to derive consumers' valuations of Auto-Switch and so provide an estimate of the consumer value of this reform. We explained that in our view this evidence provided a better estimate than a "time-savings" approach¹¹⁷, because it related specifically to the reforms we had proposed, and (in principle) fully captured the value of the difficulties that switchers would avoid when using a new process to switch.^{118 119}

A4.22 We recognised that this type of evidence must be interpreted carefully and adjusted stated WTP figures downwards, to reflect the likelihood that some respondents who said they would use Auto-Switch may not actually do so and would therefore derive no value from the introduction of Auto-Switch, even if they had stated a positive WTP for it in our survey.¹²⁰ At that time, we applied an adjustment to respondents' WTP values, based on how confident they were about taking up the process if it was free. Under our base case, we took 80% of the values stated by respondents who said they would definitely use the options when free, and 20% of the values stated by respondents who said they would probably use them when free.^{121 122}

A4.23 Notwithstanding our adjustment of the WTP values to reflect estimated take-up of Auto-Switch, we also (under our base case) presented a range for the consumer valuation of Auto-Switch which was determined by the values that respondents told us they would

¹¹⁶ Specifically, respondents could answer as follows in response to the question as to whether they would take up Auto-Switch if it was available for free: i) Definitely wouldn't; ii) Probably wouldn't; iii) Possibly would/possibly wouldn't; iv) Probably would; and v) Definitely would. Any respondent who answered iii) to v) was presented randomly with one of the following price points: 50p; £1; £2; £5; and £10, and asked whether they would pay a price, in turn (If they said they probably or definitely *would not* pay to a price point, then they were not shown a higher value; and if they said they definitely *would* pay to a price point, they were not shown a lower value), until they said they would probably or definitely not pay that price (or until they reached the maximum price of £10).

¹¹⁷ In our March 2016 consultation, we attempted to quantify the time savings that we expected both reforms (at the time GPL and Auto-PAC) would generate as a consequence of removing the need to contact the losing provider to request a PAC and/or cancel (we referred to this as a "time savings" approach). This approach factored in the continued requirement for switchers to text the losing provider and then pass the PAC to their gaining provider, under Auto-Switch. We estimated at the time that Auto-Switch would deliver time saving benefits worth between £10.9 million and £32.6 million (NPV over ten-years), with a central case estimate of £21.7 million. In May 2017 we presented revised estimates which took account of stakeholder comments and new information, including revised take-up rates sourced from our 2017 BDRC research. Based on these adjustments, we estimated that Auto-Switch would deliver around £6.9 million by way of time savings benefits (with a range of £5.8 to £8 million). These calculations are set out in Annex 10 of the May 2017 consultation (Calculation of time savings) and in Annex 5.

¹¹⁸ However, as we made clear in our March 2016 consultation, the time savings approach does not capture the difficulties we expect consumers to avoid when using a new process to switch provider and the broader benefits of an easier switching process. Consequently, this approach cannot account for the full benefits we expect our reforms to deliver.

¹¹⁹ See §A10.4 in Annex 10 of the May 2017 consultation (Calculation of time savings)

¹²⁰ See Annex 11 of the May 2017 consultation (Estimating the benefits of introducing Auto-Switch and GPL using a WTP approach).

¹²¹ In our base case, we assumed that 42% of PAC switchers and 38% of C&R switchers would take up Auto-Switch. See BDRC 2017 research, slide 14.

¹²² Under our low case the equivalent percentages were 80% and 0% respectively and under the high case, 80% and 40% respectively.

definitely pay (at the lower end), and the highest value that respondents told us they would definitely or probably pay (at the upper end).

- A4.24 Using this methodology, we estimated under our base case that Auto-Switch could be expected to generate somewhere between £17.5 million and £37.0 million in consumer benefits (in 10-year NPV terms) from simplifying the switching process (i.e. reduced time and hassle),¹²³ ¹²⁴ although we recognised there were several reasons why these figures might under-state benefits.¹²⁵
- A4.25 We also noted that Auto-Switch would lead to a reduction in double-paying amongst C&R switchers who said they would use Auto-Switch to switch¹²⁶ and estimated this benefit to be £18 million under our base case.¹²⁷
- A4.26 We said that implementing a switching process for non-porters in conjunction with notice period reforms should serve to reduce the loss of service that is currently experienced amongst C&R switchers. We said this was because non-porters would no longer need to actively coordinate the stop and start of their old and new services so as to avoid contract overlap (which can lead to a break between services). Instead, they can redeem their N-PAC at or before the point that their new service is activated (under Auto-Switch) and their switch will automatically be co-ordinated.¹²⁸
- A4.27 Finally, we said that, by making switching easier and faster (and thus lowering barriers to switching), we believed that Auto-Switch would deliver benefits to would-be switchers (some of whom may currently be deterred from switching to a service that they prefer), and benefits flowing from increased competition between providers. Whilst we did not quantify these benefits, we considered they were material impacts that are additional to the benefits we have quantified, and were important to our assessment.¹²⁹
- A4.28 In respect of costs, we estimated the gross cost of implementing full Auto-Switch for residential and business tariffs (10-year NPC) was £62 million, with a range of £51 million to £72 million to reflect a change in estimated setup costs of +/- 20%.
- A4.29 We also assumed that providers would enjoy some costs savings under Auto-Switch, on the basis that automating the switching process means fewer of their customers wishing to switch are likely to contact them to ask for a PAC or terminate their contract, so losing

¹²³ Under our low case this estimate was £16.4 million and under the high case, £42.5 million.

¹²⁴ See May 2017 consultation §6.46.

¹²⁵ See §5.43 in Section 5 of the May 2017 consultation (Impacts from introducing our options for reform).

¹²⁶ In May 2017, we explained that these benefits are incremental to Auto-Switch because they would not accrue to C&R switchers if we only prohibited notice period charges after the switching date. In other words, they are conditional on the notice period reform being implemented together with Auto-Switch.

¹²⁷ The equivalent figure under the low case was £15 million and under the high case was £22 million (10-year NPV). See Figure A9.2 in Annex 9 of the May 2017 consultation (Calculation of reduction in double-paying).

¹²⁸ Although we also noted that, absent End-to-end management, C&R switchers who decide to port their number may still experience service disruption while their number is being ported. See §5.52 in the May 2017 consultation.

¹²⁹ See §5.53 to §5.67 in the May 2017 consultation.

providers require fewer customer service agents.¹³⁰ Based on our assumptions about the number of avoided contacts per year, the time saved per call (which includes “wrap time”), and average customer service agent salaries,¹³¹ we estimated that providers would save £18 million under Auto-Switch (with a range of £15 million to £21 million).¹³²

A4.30 In summary, we concluded that the quantified benefits of implementing Auto-Switch for residential and business customers¹³³, were between £31 and £64 million, with a base case of £36 to £55 million, although we recognised these estimates were conservative. We estimated the net cost to industry to be between £30 and £57 million, with a base case of £44 million.¹³⁴

Stakeholder comments on Auto-Switch

A4.31 Several stakeholders commented on our analysis of the benefits and costs of implementing Auto-Switch. We provide a brief overview of these comments below.

A4.32 A number of stakeholders disagreed with our analysis of the BDRC 2017 survey data and the derivation of the consumer valuation estimates for Auto-Switch. These comments can be grouped into two broad themes:

- A number of providers said that our estimates do not reflect what respondents would actually be willing to pay for Auto-Switch: BT/EE, O2, and Vodafone submitted that our estimates overstated what respondents would actually be willing to pay for Auto-Switch, whilst Three submitted the estimates understated what respondents would be willing to pay; and
- BT/EE said that our estimates are unreliable and inconsistent with the approach we took on our 'Auto-compensation' project to estimate the benefit to consumers from avoiding quality of service problems in their fixed telecommunications services.

A4.33 In relation to the reduction in C&R double paying attributed to Auto-Switch:

- BT/EE agreed there are benefits from addressing double paying for PAC switchers, but disagreed such a benefit exists for C&R switchers, suggesting that these consumers continue to receive service, and a significant majority (around 80%) decided to have an overlap because they derived an immediate benefit from it.¹³⁵
- O2 queried the attribution of reductions in double payments to the implementation of Auto-Switch on the basis that reductions in double paying are largely attributable to measures which are independent of Auto-Switch and which could be implemented by

¹³⁰ See §5.72 to §5.75 in the May 2017 consultation.

¹³¹ We set out these assumptions in Annex 8 of the May 2017 Consultation. “Wrap time” refers to the time spent by the customer service agent after the PAC request or termination call has finished, which would also be saved.

¹³² See May 2017 consultation §5.75.

¹³³ By way of (i) reduced unnecessary time and difficulties and (ii) reduced double paying for C&R switchers.

¹³⁴ See May 2017 consultation §5.103.

¹³⁵ BT-EE May 2017 consultation response, §106.

themselves.¹³⁶ O2 also said this approach duplicated the “Willingness to Pay” value already attributed to Auto-Switch, which we had concluded was a comprehensive measure.¹³⁷

A4.34 O2 also said that they were not convinced that the benefit from reducing loss of service amongst C&R switchers would be material since non-porters are already likely to be managing the switch and that the voluntary improvements to the process being undertaken are the primary driver of a reduction in loss of service.¹³⁸

A4.35 In respect of costs, a number of mobile providers said that our cost estimates for Auto-Switch were too low, for a number of reasons. Annex 3 sets these out in detail. In summary, views expressed included:

- Inclusion of non-porters within Auto-Switch almost doubles the implementation costs for Auto-Switch (BT/EE)¹³⁹.
- We had not properly factored in additional costs for the automatic activation of the SIM (BT/EE, Virgin)¹⁴⁰, those switching sets of 2-24 numbers (Virgin)¹⁴¹ and detecting the authorised account holder ([§<]);¹⁴²
- A number of providers criticised or called for revisions to the way Auto-Switch delivers information about the implications of switching to switchers (BT/EE, O2, Virgin, Vodafone, [§<])¹⁴³. BT/EE¹⁴⁴ also went on to comment that costs may arise due to the need to deal with an increased number of poorly informed switching decisions.
- Inclusion of links on the text to consumers that also carries the PAC/N-PAC would increase costs (BT/EE)¹⁴⁵.
- Better mechanisms were needed to minimise risks of fraudulent or unauthorised switching under Auto-Switch (BT/EE, O2)¹⁴⁶, and that better mechanisms would increase costs. Comments also included that costs may arise due to the need to remedy fraudulent or unauthorised switches (BT/EE, O2).
- Regarding the costs for small mobile operators serving business customers to implement Auto-Switch when the scope of Auto-Switch includes business customers,

¹³⁶ O2 May 2017 consultation response, §73.

¹³⁷ O2 May 2017 consultation response, §42.

¹³⁸ O2 May 2017 consultation response, §71.

¹³⁹ BT/EE May 2017 consultation response §8, §57, §62.

¹⁴⁰ BT/EE May 2017 consultation response, §57, §66, §71, §108; Virgin May 2017 consultation response §20.

¹⁴¹ Virgin May 2017 consultation response, §6.

¹⁴² [§<] May 2017 consultation response, [§<].

¹⁴³ BT/EE May 2017 consultation response, §9, §51, §73-§77; O2 May 2017 consultation response, §27-§28, §30, §56-§60, §151-§156; Virgin May 2017 consultation response, §7-§8, §17-§18, Vodafone May 2017 consultation response, pages 16-17, page 27; [§<] May 2017 consultation response [§<].

¹⁴⁴ BT/EE May 2017 consultation response, §10, §51, §75-§76, §110.

¹⁴⁵ BT/EE May 2017 consultation response, §77.

¹⁴⁶ BT/EE May 2017 consultation response §11, §55, §78-§88, §109; O2 May 2017 consultation response, §29, §61-§62, §142-§150.

TalkTalk¹⁴⁷ and [redacted]¹⁴⁸ suggested that we had not modelled these in a sufficient degree of detail. TalkTalk suggested that it would need to carry out significant systems changes to implement Auto-Switch where it includes business switches.

- Some stakeholders also commented that our modelling assumptions about the mobile supply chain and/or our typical operator approach were insufficiently accurate, including because of our assumptions about how Switching Information would be provided by small mobile operators, and so had underestimated some costs of Auto-Switch (TalkTalk¹⁴⁹, O2¹⁵⁰).

A4.36 O2¹⁵¹ suggested that the cost savings we had anticipated that Auto-Switch might deliver to operators, because consumers would be more likely to use automated methods of requesting PAC/N-PAC rather than calling customer service agents, would not materialise because operators would need to spend more on out-bound consumer retention measures.

A4.37 A number of stakeholders also commented on the scope of the Auto-Switch reform:

- BT/EE said that the N-PAC proposal for C&R switchers was unwarranted because the harm related to double paying for this group has been over-stated and because many of these customers may not use the new proposed process for requesting an N-PAC, because it seems more complicated than the current C&R process.¹⁵² BT/EE also said the route for C&R customers appears to be disproportionate, with benefits likely to be lower than indicated by Ofcom, and costs higher, and that Ofcom should look at alternatives to address potential harm related to this, with the most obvious being to let C&R customers choose the date by which they want the service with their current provider to stop.¹⁵³
- One stakeholder (Virgin) expressed concern about extending Auto-Switch to cover residential and business customers switching between 2 and 24 numbers on the basis of the extra functionality and costs implications of doing so.¹⁵⁴
- Some stakeholders queried the extension of Auto-Switch to business customers. One stakeholder ([redacted]) said that the additional cost of implementing Auto-Switch appeared to be disproportionately higher for business providers, due to the complexity involved in managing information flow and systems development.¹⁵⁵ Another stakeholder (TalkTalk) said that, while they welcomed the extension of the reform to small business

¹⁴⁷ TalkTalk May 2017 consultation response, §4.7-§4.8.

¹⁴⁸ [redacted] May 2017 consultation response [redacted].

¹⁴⁹ TalkTalk May 2017 consultation response, §2.4.

¹⁵⁰ O2 May 2017 consultation response, §47-§48.

¹⁵¹ O2 May 2017 consultation response, §80-§81.

¹⁵² BT/EE May 2017 consultation response, §54.

¹⁵³ BT/EE May 2017 consultation response, §112.

¹⁵⁴ Virgin May 2017 consultation response, §6.

¹⁵⁵ [redacted] May 2017 consultation response, [redacted].

customers all elements of the proposal must be proportionate both across the industry value chain and for individual providers.¹⁵⁶

A4.38 In what follows we set out our updated assessment of benefits and costs. In doing so, we set out our responses to the stakeholder comments that have been raised.

Updated assessment of benefits and costs

Benefits

Reduction in unnecessary time and difficulties progressing the switch

A4.39 By providing alternative routes to obtain a PAC (text or online), Auto-Switch would allow switchers to avoid the need to contact the losing provider to request a PAC code (porters), or to cancel (non-porters). As such, it should both reduce the time and address (to a large extent) the unnecessary difficulties that customers experience in progressing their switch.

A4.40 As in May 2017, we consider that evidence on how much switchers would be willing to pay (WTP) to use Auto-Switch provides a useful guide to the difficulties switchers would avoid i.e. benefits switchers might be expected to obtain, from the implementation of Auto-Switch.

A4.41 However, following our May 2017 consultation, we have reflected further on our approach and have concluded that the approach we used at that time led to double down-weighting of benefits (see Annex 7). We have therefore revised our approach to adjusting for hypothetical bias so that only one adjustment is made to the amount respondents would be willing to pay, and so that this adjustment is applied consistently across all the questions that explore take-up.¹⁵⁷ Specifically, under our revised approach (base case scenario), we apply a consistent 80/20 adjustment across all price points. This assumes that at each price point 80% of those who stated that they would definitely pay would do so, and 20% of those who would probably pay would do so.

A4.42 Using this approach, we estimate that the consumer valuation for Auto-Switch is £28 million (10-year NPV). This is less than half the value implied by the unadjusted figures, which place full weight on the amounts respondents told us they would definitely or probably pay (see Figure A4.1).

¹⁵⁶ TalkTalk May 2017 consultation response, §4.10.

¹⁵⁷ This change in calculation of the WTP benefit does not affect our conclusion on proportionality. The Statement approach results in a WTP value which is just above the middle of the range calculated for the May consultation.

Figure A4.1: Aggregate adjusted WTP benefit

Group	Base case (80/20)		Unadjusted (100/100)	
	Yearly benefit, £m	10-year NPV, £m	Yearly benefit, £m	10-year NPV, £m
PAC switchers	2.1	18.3	4.9	42.1
C&R switchers	1.1	9.7	2.7	23.0
Total	3.3	28.0	7.6	65.2

A4.43 As noted above, several providers said that our estimates overstated what respondents would actually be willing to pay for Auto-Switch due to hypothetical bias, other biases and the way the 2017 BDRC survey was designed. More specifically:

- Several stakeholders (BT/EE¹⁵⁸, O2¹⁵⁹) said our estimates overstated respondents' actual WTP due to hypothetical bias. BT/EE said hypothetical bias was likely to be particularly strong for a passive use service such as switching where there is a lack of familiarity with paying for such services and that, as such, the results should be treated with caution and used as a supplement rather than substitute to other estimates e.g. time savings.¹⁶⁰
- BT/EE also said our respondents may have an incentive to overstate their WTP in the hope of influencing policy by signaling support for a reform (i.e. strategic bias or 'warm glow') or simply to please the interviewer (i.e. 'yea saying').¹⁶¹
- Several stakeholders (BT/EE, Virgin, Vodafone) said that our estimates overstated respondents' actual WTP as important details of the process were left out that meant respondents under-estimated the need to contact their losing provider. On this, BT/EE submitted that, since consumers are only given information about ETC and handset liability this may result in many consumers having to call their provider back about implications for other services or could result in consumers going ahead with the switch and regretting their decision because of impacts on other services they were not made aware of.¹⁶²

¹⁵⁸ BT/EE May 2017 consultation response, §6, §99.

¹⁵⁹ O2 May 2017 consultation response, Table 2.

¹⁶⁰ BT/EE May 2017 consultation response, §100.

¹⁶¹ BT/EE May 2017 consultation response, §99.

¹⁶² BT/EE May 2017 consultation response, §6, §73, §77 and §99.

- BT/EE disagreed with our position that respondents' valuations might be under-stated because respondents could only respond to a set of specified prices rather than give their actual valuation and submitted that if anything this could over-state value. For instance, respondents may have only valued Auto-Switch at £1.20 but selected £2 because it was closer to their value than zero.¹⁶³
- BT/EE also said we provided no evidence to support our view that respondents are unlikely to fully account for indirect benefits of switching reforms such as those from number portability and double paying. BT/EE said that, if anything there is a risk that respondents' WTP include the double paying benefit, which would mean that we had double counted this benefit.^{164 165}

A4.44 We make the following observations in relation to these points:

- We are aware that WTP estimates based on survey responses can be subject to hypothetical bias and have taken account of this by adjusting respondents' stated WTP for Auto-Switch using the methodology described in paragraph A7.39.¹⁶⁶ For the reasons set out in paragraph A7.22, we think our approach likely over-corrects for hypothetical bias, rather than under-corrects.
- There are other reasons why our estimates are likely to be conservative and we have set these out in paragraph A7.36 and A7.37 of the WTP Annex. In particular, consumers' valuations of Auto-Switch may be framed by the fact that switching processes are normally free, or that when first presented with Auto-Switch they were told that it would be free to consumers. We have not adjusted for this effect.
- We understand that strategic bias can be an issue in some surveys however, in this present case, we think it unlikely that strategic bias from 'warm glow' or 'yea saying' materially influenced the WTP estimates respondents provided. This is because the survey was conducted online so it seems unlikely respondents gave answers to please interviewers. In any case, the down-weighting to take-up would also correct for any 'warm glow' effect.
- We disagree that our estimates overstated respondents' actual WTP as important details of the process were left out that meant respondents under-estimated the need to contact their losing provider. Respondents were presented with clear information about what information was available under Auto-Switch and, before being asked to consider their interest in and willingness to pay for Auto-Switch they were asked to consider what discussions they had had with their provider when they switched last

¹⁶³ BT/EE May 2017 consultation response, §103.

¹⁶⁴ BT/EE May 2017 consultation response, §105.

¹⁶⁵ O2 also said that we should have considered Auto-Switch's counterfactual (i.e. the WTP for voice requests), O2 May 2017 consultation response, Table 2. On this point, we note that respondents were asked how much they would pay to use Auto-Switch, rather than switch the way they did last time, which for the vast majority of respondents was by phone. As such, the willingness to pay figures provided were largely given relative to the counterfactual of obtaining a PAC code by phone.

¹⁶⁶ On BT's specific point that hypothetical bias is likely to be particularly strong when survey respondents are asked to provide their WTP for a switching service that in reality would be free, we disagree. If anything, we would expect consumers to under-state the amounts they would be prepared to pay for a service, if they are used to getting it for free.

time. In our view, the reasons for these discussions would have been in their mind when expressing interest and WTP in the scenarios. It is also worth highlighting that, in practice, should consumers have the need for further information on the implications of switching than is made available via text, they can access this via their online account.

- We continue to believe that the price points presented in the survey could have led to an understatement, not overstatement, of respondents' actual WTP for Auto-Switch. Respondents were not shown all the price points and asked to select which was closest to their actual WTP. Instead, they were presented with price points in turn and asked whether they would pay that specific value: whether the next price point was higher or lower depended on the answer they gave to this question. Under these circumstances we think it unlikely that any respondents who only valued Auto-Switch at £1.20 would have selected £2 because it was closer to their value than zero: it is much more probable that they would have selected £1.

- A4.45 We disagree with BT/EE's comment that we have double counted the benefit from reducing double paying because respondents' WTP could reflect a reduction in double paying. Respondents were not informed that they would no longer pay notice periods under Auto-Switch, so it would not be factored into their response.
- A4.46 BT/EE also queried the reliability of our estimates on the basis of their wide range and their significant disparity to our time savings estimates.¹⁶⁷ We disagree. The range of our estimates based on WTP responses illustrates the effect of different valid approaches we considered when adjusting respondents' stated WTP for Auto-Switch to address for hypothetical bias. Further, we are of the view that our time savings estimates are a partial and lower bound estimate of the potential benefits of Auto-Switch as time savings captures only one part of the value of Auto-Switch. In particular, we note that a significant proportion of C&R switchers indicated that they would now port their number under Auto-Switch; this benefit would not be considered in any time-savings estimates.
- A4.47 BT/EE also said that by placing weight on the WTP estimates in favour of the time savings estimates, we were being inconsistent with the approach we took to estimate benefits in our 'Auto-compensation' project where we placed weight on the component based analysis (which included estimates of time-savings) in favour of WTP estimates.¹⁶⁸
- A4.48 We disagree with this point and think that the approach we have taken to estimate the value consumers attach to Auto-Switch is consistent with the approach we took in Automatic compensation.¹⁶⁹ In Automatic compensation we gave more weight to the

¹⁶⁷ BT/EE May 2017 consultation response, §102.

¹⁶⁸ BT-EE May 2017 consultation response, §98.

¹⁶⁹ See Annex 4 of the March 2017 Automatic compensation Consultation, available here:

https://www.ofcom.org.uk/data/assets/pdf_file/0033/98709/automatic-compensation-consultation-annexes.pdf#page=9

component based analysis (also called the reasonable compensation estimates¹⁷⁰) because, in contrast to the WTP estimates, they were based on the responses of consumers who had experienced loss of service, which was what we were seeking to quantify. Here, we think it is appropriate to put more weight on the WTP valuations estimates because they are based on the responses of switchers who are well placed to comment on the value Auto-Switch could deliver and are capable of capturing the value of reduced hassle, as well as saved time.

- A4.49 In the round, we consider our approach to estimating consumer valuation for Auto-Switch is appropriate and that our estimates are more likely to understate than overstate the benefits of the reforms.

Reduction in double-paying amongst C&R switchers

- A4.50 As set out above, BT/EE disagreed such a benefit exists for C&R switchers, suggesting that these consumers continue to receive service, and a significant majority (around 80%) decided to have an overlap because they derived an immediate benefit from it.¹⁷¹
- A4.51 We recognise that, in contrast to existing PAC switchers, existing C&R switchers who currently double-pay for two services can use both services concurrently in the period for which they double-pay. However, as set out in Section 3, 68% of C&R switchers who are in contract and who experienced contract overlap, said they did not want it – and the most popular reason among the C&R switchers who had contracts which overlapped was to get the handset as soon as possible, rather than being able to use two services concurrently.¹⁷² As such, we have not adjusted our estimates to account for the possibility that some C&R switchers derive benefits from being able to use two services. We further note that in calculating double paying benefits for C&R switchers we have only taken into account those respondents who said they would definitely or probably use Auto-Switch and further adjusted take-up downwards using an 80/20 adjustment as explained above. These respondents chose Auto-Switch over the status quo, which suggests that they do not find value in receiving two services simultaneously. Those consumers who want their contracts to overlap and who make a conscious decision to receive two services at the same time will be able to do so in the future as well, and we did not attribute any benefit in reduction of double-paying to these consumers.
- A4.52 O2 queried the attribution of reductions in double payments to the implementation of Auto-Switch on the basis that reductions in double paying are largely attributable to

¹⁷⁰ The reasonable compensation estimates in the Automatic compensation project included respondents' valuation of the time it took them to resolve loss of service, but also other impacts of loss of service (e.g. negative impact on day to day activities, and anxiety or stress).

¹⁷¹ BT/EE May 2017 consultation response, §106.

¹⁷² Based on BDRC 2015 slide 54 and 55 - Analysis of the verbatim responses suggests that a minority of respondents who experienced a contract overlap provided a reason which suggested they benefitted from contract overlap (e.g. "to get used to a new phone"). This is included in "Other".

measures which are independent of Auto-Switch and which could be implemented by themselves.¹⁷³

- A4.53 We disagree. The notice period reform part of our package of measures applies where switchers (including porters and C&R switchers) use the Auto-Switch process which we are introducing. C&R switchers who do not use Auto-Switch remain subject to any notice periods set out in their contract with their mobile operator. As such, the benefits from reduced double paying amongst C&R switchers only arise in connection with Auto-Switch. Whilst (as we set out in Section 5 and above) we consider that it is appropriate to consider the benefits and costs of our package of reforms together, to the extent that more granular allocations are to be considered we therefore remain of the view that it is appropriate to allocate the benefits from reduced double paying amongst C&R switchers to Auto-Switch.
- A4.54 To elaborate, using the 2017 BDRC research, and adjusting take-up to account for hypothetical bias, we have estimated that approximately 38% of current C&R switchers would use Auto-Switch. The vast majority of this group consists of C&R switchers who stated that they would port their number (i.e. they would become a PAC switcher under Auto-Switch) [86%] although some would use Auto-Switch to switch without porting their number [14%].¹⁷⁴ In the absence of Auto-Switch, these switchers would continue to face the risk of double-paying.

Reduction in loss of service amongst C&R switchers

- A4.55 O2 said that they were not convinced that the benefit from reducing loss of service amongst C&R switchers would be material since non-porters are already likely to be managing the switch and that the voluntary improvements to the process being undertaken are the primary driver of a reduction in loss of service.¹⁷⁵
- A4.56 We disagree. We would expect C&R switchers who use Auto-Switch to be less likely to experience loss of service. This is because, under Auto-Switch, switchers will no longer need to manage contract overlap to minimise double paying and risk loss of service when this goes wrong. We have not been able to quantify this benefit but note that 27% of C&R switchers experienced a loss of service of more than a day¹⁷⁶ and 73% of existing C&R switchers told us they would use Auto-Switch (which we discounted to 38% to account for any risks associated with hypothetical bias)]. As such we think this benefit could be material.

¹⁷³ O2 May 2017 consultation response, §72 and §78 (ii).

¹⁷⁴ While these switchers are current C&R switchers who would use Auto-Switch in the future and port, some of them also stated they would definitely or probably keep their number “ideally” next time they switched (irrespective of availability of Auto-Switch). There is some uncertainty regarding whether these respondents would port next time absent Auto-Switch. Many of them had strong preference for keeping their number last time, but they did not do so. Moreover, the 38% is a conservative estimate, and is already down-weighted compared to stated responses.

¹⁷⁵ O2 May 2017 consultation response, §71.

¹⁷⁶ BDRC 2016 research, slide 49

Benefits to non-switchers

- A4.57 We are of the view that by reducing barriers to switching, our reforms are likely to generate benefits to mobile users who do not switch under the current switching process (i.e. non-switchers) regardless of what they do after the introduction of our reforms. This is because the reforms might i) lead some consumers, in particular those who actively consider switching, to change their behaviour; and ii) encourage competition between providers.
- A4.58 Within the term non-switchers we include two groups of consumers: active considerers, i.e. mobile users who considered changing provider and actively started looking for one but decided not to change provider in the last 12 months; and inactive consumers, i.e. mobile users who did not consider changing provider or who considered changing provider but did not start looking for one in the last 12 months.
- A4.59 In May 2016, we had referred to ‘non-switchers’ as ‘would-be switchers’ to highlight the point that active considerers and inactive consumers needed to do something to benefit from our reforms. More specifically, we said that active considerers needed to get and accept a save offer or become switchers in order to benefit, while inactive consumers needed to become switchers or active considerers in order to benefit.
- A4.60 Vodafone argued that Ofcom did not account for the cost of some consumers losing out on reactive save offers¹⁷⁷ as a consequence of removing the need to contact the losing provider as part of the switch.¹⁷⁸
- A4.61 We have taken account of Vodafone’s point and have conducted further analysis to understand how our reforms might affect would-be switchers in light of the impact the package of reforms may have on the incidence and magnitude of save offers.
- A4.62 We have focused our analysis largely on active considerers because switching costs may have affected their decision to stay with their current provider instead of switching. Some of these consumers stay with their provider because the alternative provider’s deal is not attractive enough, potentially due to high perceived switching costs. Others consider switching but accept a better deal from their current provider, and their decision to accept or reject this save offer may also depend on expected switching costs. In both cases, consumers may benefit from a reduction in switching costs as a result of our reforms.

¹⁷⁷ By the term reactive save offers, we mean circumstances where the losing provider is able to accurately identify customers intending to switch, as a result of information they receive as part of the formal switching process, and to make them a counteroffer not to switch. The term does not refer to counteroffers requested by a consumer who explicitly contacts the losing provider with the purpose of obtaining a better offer. The term “save offers” includes this latter category as well as reactive save.

¹⁷⁸ Vodafone January 2017 cost update response, page 10.

- A4.63 **Active considerers:** There are about 1.9 million active considerers per year.¹⁷⁹ Annex 8 sets out in more detail our view of why material benefits from our package of reforms are likely and that this could apply to more than 1 million of these active considerers. In summary, our key findings are:
- We expect that a proportion of active considerers would likely benefit from our reforms by switching to a product they prefer, specifically some of those active considerers who have been put off switching because of the process difficulties our reforms aim to address, rather than other reasons.
 - Some active considerers may now switch rather than accept a safe offer. This group may be better off taking advantage of a new competitive deal from a different provider. Switching consumers are likely to benefit from special offers for new customers, which tend to be among the most attractive offers in the market. Further, the reduction in switching costs may mean that switching is now better for the consumer than accepting a save offer. However, we cannot rule out that some might be worse-off by our reforms, if the offer that they switch to is worse than the save offer which they would have received, although we would expect such an impact to be modest.¹⁸⁰
- A4.64 The remaining consumers (inactive consumers and those active considerers whose behavior does not change) will also benefit from our reforms as a reduction in switching costs and possibly also in price discrimination can be expected to reduce prices to inactive consumers. As the group of inactive consumers is very large – 39m consumers per year – even a relatively small impact per consumer can be significant.
- A4.65 We continue to expect that our process reforms, by removing unnecessary difficulties and thus by making switching easier and faster, could deliver additional benefits flowing from increased rivalry between providers. We consider that this increased competition would benefit consumers by way of lower prices, higher quality of service and increased innovation.¹⁸¹
- A4.66 When switching is easier and can be done faster, smaller price differences can persuade more consumers to switch (or to consider switching). This can strengthen providers' incentives to compete on prices: new customers can be attracted by offering smaller price gains, while retaining customers requires setting prices closer to the best prices available in the market.
- A4.67 The same rationale applies to quality of service and innovation – providers' incentives to compete on quality of service and innovation can be stronger when switching is easier and

¹⁷⁹ Ofcom Switching Tracker 2015 reported 4% of mobile consumers were classified as 'actively considered but did not switch' – this equates c. 1.9 million mobile consumers. Data from the Switching Tracker 2017 reports approximately 2m active considerers.

¹⁸⁰ With lower switching costs, the price offered by a gaining provider could be lower than the offer the losing provider would originally have made absent the reforms.

¹⁸¹ March 2016 consultation, §6.37-§6.45.

faster. Providers might anticipate that smaller differences in quality of service and innovation could have a greater impact – offering good quality of service and innovation could make it easier to attract more new customers (to the extent that consumers are aware of quality of service information and select a provider on this basis), while the risk of losing existing customers due to poor quality of service and innovation could be greater.

- A4.68 We have not attempted to quantify dynamic benefits as these are difficult to estimate with any degree of precision, but we consider that these benefits could be of a material scale. This is because they relate to a large base and, as discussed above, we consider that the core process reforms would make switching easier and faster.
- A4.69 uSwitch has expressed concern that we have failed to quantify the monetary size of the benefits for non-switchers and has stated that mobile consumers could be missing out on average savings of £176 per year from switching.¹⁸² Whilst we agree that our reforms are likely to deliver material benefits to non-switchers, and have set out indicative estimates of the number of consumers that could benefit, we still consider that there are inherent difficulties in estimating the monetary size of this benefit. However, we agree with uSwitch that the benefit could be large.
- A4.70 In its response to the May 2017 Consultation, O2 said that we had treated the benefits and costs of our reforms in an inconsistent manner by (i) not attributing the costs of a potential increase in outbound calls to our reforms, and yet, (ii) attributing the benefits of improved save offers and increased competition to our reforms.¹⁸³
- A4.71 We disagree that we have been inconsistent. We consider that there will be increased competition due to a reduction in switching costs. Whilst it is possible that this reduction in switching costs may lead to improved save offers, this is not due to an increase in outbound call activity, but rather due to consumers' threat to switch being more credible due to a reduction in switching costs.

Implementation costs

Setup and ongoing costs

- A4.72 Since May 2017, we have refined our estimate of gross setup, training and operating costs in light of stakeholder comments.
- A4.73 We have set out the changes to our cost estimates since May 2017, and provide our response comments in detail in Annex 3. In summary we have adjusted gross costs to reflect:
- Additional cost activities that may arise for mobile operators and the Central Porting Service (CPS) in implementing Auto-Switch to accommodate switchers who do not port their number;

¹⁸² uSwitch May 2017 consultation response, page 2.

¹⁸³ O2 May 2017 consultation response, §81.

- A number of other minor amendments and clarifications to cost activities, including amendment and clarification of the employee types used to model costs.

A4.74 Having adjusted for these changes, we estimate that the estimated gross cost of implementing full Auto-Switch for residential and business tariffs (10-year NPC) is £66 million, with a sensitivity range of £54 million to £79 million.^{184 185}

Cost savings

A4.75 We recognise that providers may choose to make more pro-active retention calls, either before consumers terminate their contract or after providers receive a PAC request / Switching Information request (or both), under Auto-Switch. However, we remain of the view that, to the extent that providers choose not to realise the savings that automatically flow from our reforms, then this is a commercial decision, not the necessary result of our reforms. In addition, we would expect providers to make such a commercial decision if they expect it to be incrementally profitable. As such, we would not expect it to represent a net cost to these providers.

A4.76 As a result, we continue to take account of providers' cost savings in our estimates of net industry cost.¹⁸⁶

Net implementation cost

A4.77 The total impact of our process reforms on mobile providers is the total setup, training and ongoing costs, net of provider cost savings. Under the assumptions described above, we estimate the net cost of Auto-Switch to be around £48 million under our base case (with a range of between £33 million to £64 million (all 10-year NPCs)).

Summary of the benefits and costs of our core process reforms

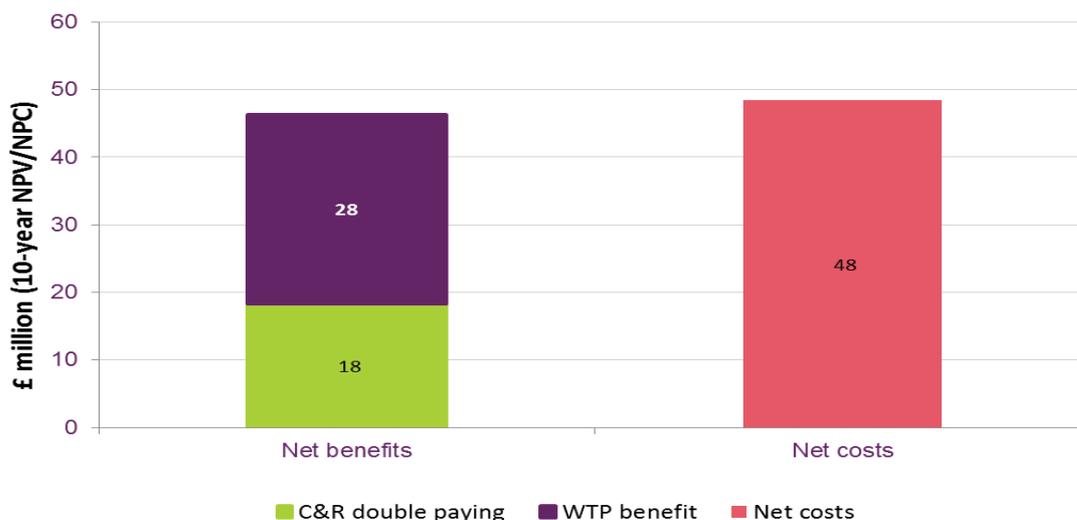
A4.78 Figure A4.2 summarises our revised assessment of the incremental impact of implementing Auto-Switch as part of the package of reforms. In summary, we estimate that, under our base case, including Auto-Switch in the package of reforms would deliver approximately £46 million in benefits (£28 million worth of benefits from reducing the unnecessary time and difficulties progressing the switch plus £18 million benefit associated with reduction in double paying amongst existing C&R switchers). In contrast, we have estimated under our base case the net costs of implementing Auto-Switch to be around £48 million (10-year NPC), see Figure A4.2 below.

¹⁸⁴ This reflects a range in estimated setup costs of +/- 20%, as per ICC's report.

¹⁸⁵ As we explain in §A4.92-§4.97 below, we consider that these figures are likely to overstate true costs, as a result of revisions we have made to the requirements for customers on business tariffs.

¹⁸⁶ See Annex 3.

Figure A4.2 - Incremental quantified benefits and costs of Auto-Switch



A4.79 This analysis suggests that quantified benefits are only £2 million less than costs under our base case. However, as we explain in Section 5:

- our base case omits significant non-quantified benefits in particular to non-switchers and consumers more generally;
- in terms of the quantified benefits that we estimate, we have adopted a conservative approach (see Annex 7) to estimating both take-up of Auto-Switch and in our willingness to pay calculations, such that our benefits estimate is more likely to understate than overstate benefits.
- conversely our cost estimate is likely to overstate costs, particularly in respect of our reforms for business customers, given we have relaxed the requirement to provide a PAC/N-PAC and Switching Information within one minute where requested via text or online¹⁸⁷ and instead have required that this information is provided within 2 working days. As we explain below, we expect this to substantially reduce the cost of our requirement for customers on business tariffs, potentially reducing overall net costs by several million.

A4.80 In line with best practice we have flexed our assumptions to account for the possibility that costs and/or benefits might be higher or lower than in our base case. In the case of costs, we have allowed for the possibility that gross costs are 20% higher or lower than under our base case.

A4.81 If gross costs were 20% lower, and benefits remained as in our base case, then our quantified benefits (£46m) would comfortably exceed quantified costs (£36m). Conversely,

¹⁸⁷ Where it is requested by phone, the PAC/N-PAC will need to be provided immediately by phone and where this is not possible, within 2 hours by text.

if gross costs were 20% higher (£61m) and benefits remained as in our base case (£46m), then quantified costs would exceed benefits.

- A4.82 Notwithstanding the likelihood that our base case cost estimates likely over-state actual costs by several million pounds, we have reflected further on the implications of this sensitivity analysis, and considered what assumptions on take-up would be required for quantified benefits to exceed costs in the costs + 20% scenario, and whether these assumptions are plausible. The main factor affecting the magnitude of benefits is the number of switchers that we expect to take-up / be willing to pay for Auto-Switch. Under our base case we have adopted a conservative approach and assumed that, for each given price point, 80% of those who said that they would definitely take it up and 20% of those who stated that they would probably take it up would do so.¹⁸⁸
- A4.83 As we note in Annex 7, (A7.21-22), there are other valid approaches to account for the possibility that consumers do not always do as they say. For example, we consider that a reasonable interpretation of the academic literature would be to include 100% of those who stated that they would definitely take-up/be willing to pay for Auto-Switch along with a proportion of those who stated that they would probably do so. From our calculations, even under a 20% increase in gross costs compared to our base case, benefits would exceed costs if 100% of those who stated that they would definitely take it up would do so, along with 25% of those who stated that they would probably do so. Alternatively, benefits would also exceed 'high' costs, if 80% of those who stated that they would definitely take it up would do so, along with 40% of those who stated that they probably take it up would do so. We consider that both of those are plausible scenarios for take-up.
- A4.84 Taking into account the factors that may lead to take-up and willingness to pay being understated (A7. 17 and A7.36-37), the reduction in the obligation on business customers as well as significant unquantified benefits we consider it plausible that benefits would exceed costs even if outturn costs are 20% higher than in our base case.

Impacts of the key features of Auto-Switch reform

- A4.85 As discussed in paragraph A4.37, a number of stakeholders raised points about the scope of the Auto-Switch reform in particular, whether the reform should include functionality for multiple switches / ports, whether it should be extended to non-porters, and whether it should be extended to business customers.

Inclusion of the online route for residential consumers

- A4.86 The Auto-Switch reform assessed above comprised an assessment of the costs and benefits of having both text and online versions of Auto-Switch. We consider here the incremental costs of providing an online route in addition to a text route. Providing the online PAC/N-

¹⁸⁸ If all those who stated that they definitely or probably would take-it up would do so, then benefits would far exceed costs.

PAC request route is the only practical way for multiple porters or customers switching multiple accounts to request a PAC/N-PAC without speaking to their provider. Mandating the online route also provides another route for single number porters to use to obtain a PAC/N-PAC. We have estimated that the net cost of providing this functionality for residential consumers, is around £16 million (over 10 years in NPC terms).

A4.87 In relation to benefits, we note that currently, around 6% of (non-bulk) PAC switches were part of a multiple number switch, implying that the online route makes Auto-Switch available to around 0.3 million more switches per year.¹⁸⁹ We also consider that an online route would benefit switchers who would simply prefer to request a PAC/N-PAC through their online account. Around half of PAC switchers in the 2017 BDRC research said they would prefer to use the online Auto-Switch route than the text Auto-Switch route, this includes 7% of PAC switchers who said they would only use the online Auto-Switch route to request PAC.¹⁹⁰

A4.88 We have looked at the quantified benefits attributed to adding an online route implied by the 2017 BDRC research and estimate them to be around £3 million.¹⁹¹ However, in our view these figures clearly understate the benefits of including the online route for the following reasons:

- As explained in Annex 7, the survey only collected WTP estimates for the online route from current PAC switchers who said they would only use Auto-Switch if it offered an online route: current PAC switchers who would use a text version of Auto-Switch but would prefer to use an online route were not asked how much they would be willing to pay for this additional functionality. As such, whereas 49% of all PAC switchers told us they would prefer to use the online route over the text route, only 2% were asked their WTP for the online route.¹⁹² We consider that, if we had WTP estimates from all the switchers who preferred the online route, these figures would be substantially higher.
- Survey respondents may well have assumed that they could switch multiple numbers using the Auto-Switch text-only process, causing them to over-state interest in the text only process and under-state interest in the online process.

A4.89 Furthermore, if there is future growth in the number of consumers wanting multiple switches (e.g. family SIM bundles), and/or primarily conducting their switching activities online (e.g. by researching mobile deals), the availability of an online route would be more valuable still.

¹⁸⁹ In arriving at the figure of 0.3 million, we assume a similar proportion of C&R switches relate to multiple numbers.

¹⁹⁰ We do not present the equivalent data for current C&R switchers since they were not asked about the text-based and online route separately.

¹⁹¹ This comprises around £1.7 million in additional WTP benefits, and £1.3 million in additional reductions in double-paying for C&R switchers using the online route.

¹⁹² BDRC 2017 slide 53. 5% said that they might use the text route and would use online.

Extension of Auto-Switch to Non-Porters

- A4.90 As set out above, at least one stakeholder submitted that we should not extend Auto-Switch to include N-PAC since it was skeptical that switchers would actually use it.
- A4.91 As we explained in Annex 7, the BDRC 2017 research explored usage of Auto-Switch amongst switchers. Using this data, and having adjusted for the risk of hypothetical bias, we have estimated that 38% of C&R switchers would use Auto-Switch, of which approximately one seventh (i.e. 5% of C&R switchers) would use N-PAC and change their number, rather than keep it. Whilst this is a relatively small proportion of all those who would use Auto-Switch¹⁹³, it still represents approximately 100,000 switchers per year. There are several reasons to consider these figures are conservative.
- A4.92 It is possible to approximate the quantified impacts of N-PAC and, under our base case assumptions,¹⁹⁴ the quantified benefits are estimated at around £4 million as compared to net costs of around £11 million.¹⁹⁵ Although quantified benefits are lower than costs, this is a conservative valuation of benefits and it does not capture non-quantified benefits or benefits to non-switchers. It also does not include any double paying benefits experienced by switchers who request N-PAC by phone.^{196 197}

Extension of Auto-Switch to business customers

- A4.93 The figures presented in Figure A4.2 reflect the costs and benefits of extending Auto-Switch to both residential consumers and business customers. However, some stakeholders have suggested we ought to relax our obligation to business customers as the costs of extending the reform to cover business customers is high.
- A4.94 We have estimated that around 13% of switches per year relate to business tariffs.¹⁹⁸ Accordingly, if we assume that business customers are as likely to use the Auto-Switch process as residential consumers (and are also willing to pay similar values for the process overall), this means that the quantified benefit of extending Auto-Switch to business tariffs

¹⁹³ Using the same approach, we have estimated that 42% of PAC switchers would use Auto-Switch, and all of these would port their number.

¹⁹⁴ We attribute 86.1% of relevant benefits (WTP and C&R double paying reduction) to the future porters, and the remaining 13.9% to N-PAC users.

¹⁹⁵ See gross cost model.

¹⁹⁶ This is because the description of Auto-Switch in the BDRC 2017 survey did not reference the possibility of obtaining N-PAC by phone. In practice it seems likely that some switchers will do this and as a consequence avoid double paying.

¹⁹⁷ As set out in Sections 4 and 5, there are important policy reasons to include the N-PAC process so that non-porters can use Auto Switch. Our reform of mobile switching is based on addressing the harms that result from current switching processes as a result of consumers needing to contact their current provider. This harm exists whether consumers port their number or not. It also creates a symmetric and therefore easier to communicate switching process for porters and non-porters.

¹⁹⁸ Residential tariffs account for around 87% of all mobile connections. Ofcom Communications Market Report, August 2016, page 159: <https://www.ofcom.org.uk/research-and-data/cmr/cmr16/the-communications-market-report-uk>

could be around £6 million.¹⁹⁹ As discussed in Section 5, we also consider that there are important and significant non-quantified benefits associated with our reforms, which we would expect to be larger if business tariffs were included in the scope of our requirements.

- A4.95 We have looked at the cost of extending Auto-Switch to business customers. For those providers who serve both residential and business customers, the incremental costs of extending the process to business customers could be minimal. However, for those providers (around 163 small MVNOs) who only serve business customers, the costs of implementing Auto-Switch could be more significant. We have calculated that the incremental costs of requiring the provision of real-time Switching Information on business only providers along with the other requirements of Auto-Switch would be around £12m.
- A4.96 Given the scale of these costs we have reflected further on the costs and benefits of our reform to business customers. As set out in Section 3, businesses can suffer similar harm to residential consumers when switching, or considering switching, under current switching processes. Therefore, we remain of the view that it is appropriate to ensure businesses can benefit from the same reform as residential consumers. However, as set out in section 4, we are now of the view that it is unlikely to be necessary for businesses to receive a PAC/N-PAC and Switching Information immediately and that an effective reform for businesses is for this to be provided within two working days of the text and online request. It is likely that this longer timeframe to provide a PAC/N-PAC and Switching Information would significantly reduce the costs to these operators. A longer timeframe would mean that small MVNOs could calculate the Switching Information manually – as they do now during a phone request for a PAC – rather than invest in an automated process. We consider that this would materially reduce costs, without a correspondingly large reduction in the benefits of the reform.
- A4.97 Consequently, for some small MVNOs, it is possible that they may incur no incremental costs at all under our reforms, if they already provide online accounts to their customers, and they can easily adapt current procedures to meet our obligations. For some other MVNOs, they may still need to incur the same level of costs we estimated in our May 2017 consultation (when the requirement was to provide real-time PAC/N-PAC and Switching Information) to adapt to our new process. It is difficult to estimate what proportion of business only small MVNOs are likely to fall into the two groups, as it depends substantially on whether online accounts are already provided to their customers and how they decide to deliver the PAC/N-PAC and Switching Information, though we would expect the majority to have lower incremental costs as a result of our revised requirement. In addition, MNOs and MVNEs would also have lower incremental costs, in the circumstances where small

¹⁹⁹ This comprises £3.6 million in additional WTP benefits, and £2.4 million in additional reductions in double-paying for C&R switchers. Even if business consumers were less likely to use Auto-Switch, where they do we might expect them to derive a greater benefit because the value of business time is generally thought to be higher than the value of leisure time.

MVNOs decide they no longer need them to provide real-time Switching Information on their behalf.

- A4.98 We have not therefore updated our quantified cost and benefit figures to take into account the longer timeframe we have allowed for the provision of this information, but were we to do so, we expect that it would reduce costs by several million.

Transparency requirements

May 2017 Consultation

- A4.99 In March 2016 and again in May 2017, we proposed a requirement on providers to provide consumers with clear guidance on the switching and porting process to help ensure that they are better informed.
- A4.100 In May 2017, we estimated that the cost to industry of implementing this requirement would be around £0.9 million (10-year NPV). We explained that this figure represented our estimate of the one-off costs providers would need to incur to comply with this requirement: we considered the incremental costs of maintaining this material (over and above the cost of existing updates and refreshes) would be negligible.
- A4.101 On the benefits side, we said we did not have a reliable quantifiable estimate of the reduction in harm related to improved consumer understanding, but that we continued to believe that one benefit of this reform was likely to be greater take-up of our proposals.

Stakeholder comments

- A4.102 One stakeholder (Vodafone) queried why we had not placed a value on the benefits when we considered there was a quantifiable benefit. Vodafone said that the policy reform did not pass the cost benefit analysis test and therefore there was no clear evidence using Ofcom's calculations that this should be implemented.²⁰⁰

Revised impact assessment

- A4.103 We have considered stakeholder comments on costs and continue to estimate that the net cost to industry of implementing this proposal is just under £1 million (£0.9 million, 10-year NPC).
- A4.104 Whilst the nature of the benefits of better transparency to consumers over the switching process is not readily amenable to quantification, we consider it important that consumers are informed about how to switch and only relatively modest benefits are required for it to be proportionate. In particular, it would only require an additional 80k PAC switchers to

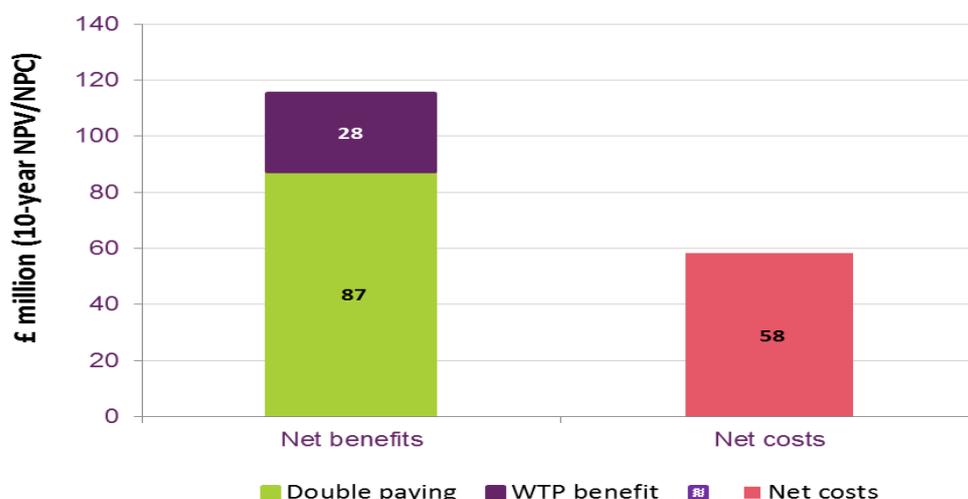
²⁰⁰ Vodafone May 2017 consultation response, page 22.

take up Auto-Switch and no longer make a call to their losing provider for the costs saved in avoided calls to outweigh the cost of implementing the transparency requirement.²⁰¹

Overall impacts from introducing our package of reforms

A4.105 Figure A4.3 summarises the overall impacts from introducing our package of reforms, based on the assessments set out in this Annex.

Figure A4.3: Quantified benefits and costs of notice period reform, Auto-Switch and transparency requirements (base case)



A4.106 In summary under our base case, we estimate that:

- Quantified benefits of notice period reform, Auto-Switch and transparency requirements total £115 million. This comprises £87 million in benefits from prohibiting charging for notice periods beyond the switching date plus £28 million in benefits from implementing Auto-Switch (though we consider that the quantified benefits of reduced unnecessary time and difficulties, as estimated using WTP evidence, are likely to understate the true benefits). This figure excludes the benefits we expect the transparency remedy to generate since these are not readily amenable to quantification.
- In contrast, quantified net costs total £58 million. This comprises around £9 million for industry to implement the prohibition of notice periods beyond the switching date; net

²⁰¹ Put another way the take-up rate amongst PAC switchers (who are eligible for time saving) would need to rise from 43.6% to 46.9%. If switchers derive a benefit from using Auto-Switch, which seems likely, then the number of switchers required to take-up Auto-Switch would be lower.

costs of £48 million to implement Auto-Switch and around £0.9 million for industry to improve consumer guidance about the switching process.²⁰²

A4.107 In addition to the benefits that we have been able to quantify, we consider that there are significant non-quantified benefits associated with implementing these reforms:

- A reduction in loss of service for C&R switchers who can more easily coordinate the stop and start of their old and new services.
- Benefits to non-switchers that result from reducing barriers to switching including those flowing from increased competition between mobile providers, by way of lower prices, higher quality of service, and increased innovation.

A4.108 We have flexed our assumptions to account for the possibility that costs and/or benefits might be higher or lower than in our base case. Again, in the case of all costs, we have allowed for the possibility that gross costs are 20% higher (low case) or lower (high case) than under our base case. Even under this assumption, benefits would still substantially exceed costs.

²⁰² We also note that our estimates of the costs of extending Auto-Switch to business tariffs are likely to substantially overstate the true costs.

A5. Calculation of time savings

Introduction

- A5.1 In Section 5 and Annex 4, we set out the impact that Auto-Switch would have on switchers. We consider that one such impact would be a reduction in the unnecessary time and difficulties associated with progressing the switch, as Auto-Switch requires providers to offer faster routes (text or online) for consumers to obtain a PAC/N-PAC from the losing provider. In March 2016, and again in May 2017, we attempted to quantify this impact by estimating the value of the time savings that would be delivered by way of benefits to consumers under Auto-Switch.
- A5.2 However, as explained in Annex 4, we have also estimated the consumer value of Auto-Switch using willingness to pay (WTP) data. In our view this evidence provides a better estimate than a “time-savings” approach because it relates specifically to the Auto-Switch reform, and (in principle) fully captures the value of the difficulties that switchers would avoid when using a new process to switch. Nevertheless, for completeness we set out in this annex the methodology that we have used to derive the quantitative time savings estimates. (The length of time to switch data on which this calculation is based is also an important input into our cost savings estimates (see Annex 3)).
- A5.3 In deriving the quantitative time savings estimates we have followed the same methodology we used in March 2016 and May 2017. In summary:
- We firstly calculate the time saving (in £ terms) per switcher, from using Auto-Switch. We do this by multiplying the value of non-working time by the reduction in time taken to switch by switchers who use Auto-Switch, relative to the status quo.
 - We then aggregate this potential time-saving across all those switchers that we anticipate will qualify for the time saving, by taking advantage of the reform. We do this by estimating the proportion of all switchers who currently speak to their losing provider when switching, and who would avoid this interaction by using Auto-Switch.
- A5.4 We discuss stakeholders’ responses to our May 2017 consultation regarding the methodology used to calculate time savings in the last section of this Annex.

Number of switchers

- A5.5 We obtained data from Syniverse under formal information powers, which showed that there were 3.23 million non-bulk²⁰³ PAC switches between October 2015 and September 2016.

²⁰³ Non-bulk ports are defined as fewer than 25 numbers being ported.

- A5.6 In order to estimate the number of C&R switchers, we used BDRC 2016 omnibus data. This survey reports that 37% of switchers²⁰⁴ did not keep their number when switching mobile provider in the 12 months prior to interview (i.e. around 63% switched via PAC).²⁰⁵ Assuming there are 3.23 million PAC switches a year (i.e. switchers who keep their number), we estimate that there are around 1.90 million C&R switchers per year.^{206 207}
- A5.7 Our estimates of the total number of PAC and C&R mobile switches per year is summarised in Figure A5.1 below.

Figure A5.1: Estimated number of mobile switches per year

PAC	C&R	Total
3.23m	1.90m	5.12m

Value of time

- A5.8 We value the time spent by consumers going through the switching process using the value of non-working time as used by the Department for Transport (DfT) in its impact assessments. We have used this source in previous impact assessments, including in our 2013 assessment of changes to switching processes on the Openreach copper network.²⁰⁸ In this Annex we use the DfT's 2017 estimate of £5.51 per hour.²⁰⁹

Length of time to switch

Status quo

- A5.9 To estimate the time saved per switcher, we are interested in the current length of calls to request a PAC and / or cancel a service, that would be avoided where a switcher uses Auto-Switch.
- A5.10 To obtain a better understanding of these call lengths, in November 2016 we issued a formal information request to six mobile providers [§<]. We asked them to provide, for pre-pay and post-pay calls (separately):

²⁰⁴ Defined as mobile customers aged 16+ who changed provider in the 12 months prior to interview.

²⁰⁵ BDRC 2017 survey suggests this proportion remains unchanged (38% switched via C&R).

²⁰⁶ This is calculated as $(3.23\text{m} / 0.63) \times 0.37 = 1.90\text{m}$.

²⁰⁷ Please note that the BDRC survey is representative of adult (aged 16+) mobile switchers, whereas the Syniverse data we used to estimate the number of actual switchers per year includes some business users and those aged under 16. By applying the BDRC survey results to the Syniverse data we assume that the behaviour of adult switchers can be extrapolated to the business users and switchers under 16 included in our estimate of the total number of switchers.

²⁰⁸ See <https://www.ofcom.org.uk/consultations-and-statements/category-2/consumer-switching-review>

²⁰⁹ Value of non-working time, expressed in 2017 prices and values, see Table A1.3.1 of <https://www.gov.uk/government/publications/webtag-tag-data-book-march-2017>

- Question 1 (Q1): Average monthly call times for calls which resulted in a successful PAC request and, separately, calls which resulted in a successful termination, between November 2015 and October 2016; and
- Question 2 (Q2): Individual call times for all calls which resulted in a successful PAC request and, separately, calls which resulted in a successful termination, for a shorter period between November 2015 and October 2016.

A5.11 We considered that this would provide us with data for the most relevant sample of calls.

A5.12 Mobile providers provided data at varying levels of granularity:

- [X] provided the requested data in full. Separately, in response to a previous formal information request, [X] also provided average call times from September 2015 for a wider sample of calls that also included “retention” calls.
- [X] provided the requested data for Q2, but their average call times in Q1 were based on a wider sample of calls than was requested. Specifically, in the case of [X], the data included calls in which the customer ultimately decided not to cancel their contract. In the case of [X], the data included calls which resulted in a PAC being issued; a disconnection being requested; a customer being upgraded; or a customer choosing to do nothing. [X] data also excluded IVR²¹⁰ times.
- [X] both provided data for Q1 that included upgrade calls. [X] also provided data for Q2 on the same basis. [X] could not provide data for Q2, and could not split out pre-pay from post-pay calls.
- [X] could only provide data in relation to Q1. These average call times were based on a wide sample of calls, including customers calling to enquire about, or request to, port their number in.

A5.13 On this basis, for the purposes of estimating time savings, we have used:

- Call times from [X] across the whole period November 2015 to October 2016.
- Call times from [X] across the shorter period for which they could provide individual call times (i.e. data from Q2), on the basis that this is the more relevant sample of calls. We have also added an IVR time for [X], based on the average IVR time across the other CPs.
- Call times from [X] across the whole period (i.e. data from Q1), adjusted by the ratios of the length of successful PAC requests / terminations to the length of all calls that we observed in other providers’ data.²¹¹ We consider that this provides a way of estimating, for these providers, the length of calls that relate solely to successful PAC requests and terminations. We have specifically adjusted [X].

²¹⁰ Interactive Voice Response (IVR) is a technology that allows a computer to interact with a human’s voice. This is used in automated telephony systems that pick-up calls, interact with callers and route calls to a customer service agent.

²¹¹ For example, if we observed that a provider’s calls which resulted in a successful PAC request / termination lasted X minutes on average, while calls which resulted in a successful PAC request / termination / retention / upgrade lasted 2X minutes on average, this implies a downward adjustment to [X] average call times of 50%.

- A5.14 We have excluded [redacted] data as we consider that the sample of calls included is too wide to provide meaningful evidence on the time taken to request a PAC / terminate a service under the status quo.
- A5.15 Figure A5.2 summarises the data provided by each provider, including any adjustments where relevant (as described above).

[redacted] Figure A5.2: Data on call lengths

[redacted]

- A5.16 Based on the data set out in Figure A5.2, we have estimated that the weighted average call duration to successfully request a PAC is 8.9 minutes, while the weighted average call duration to terminate a service is 8.8 minutes.²¹² The range of average successful PAC request call lengths, across providers, is smaller than 2 minutes, while the range of average successful termination call lengths is smaller than 3 minutes.
- A5.17 uSwitch in its response to the March 2016 consultation presented the findings of its own research which shows that it takes an average of 25 minutes' worth of phone conversations to go through the mobile switching process, with the average customer having to contact their network twice (11% of people had to speak to their losing provider four or more times).²¹³ We note that our estimates of average call times are shorter than the time taken to switch implied by uSwitch's data, but, in respect of specific call durations, we consider that actual data from providers is likely to be more reliable than average times based on survey respondents' recall.²¹⁴
- A5.18 We recognise that the average time taken to successfully request a PAC / termination could overstate the length of calls that would specifically be avoided under Auto-Switch. This would be the case if the group of switchers who would use our process reform are people who currently have no interest in discussing a better deal with their losing provider. On the other hand, it is possible that the group of switchers who encounter most difficulties with the current process – and so would be most likely to use our process reform – are those who spend a long time being subject to a significant amount of unwanted save activity, which would mitigate this overstatement. On balance, though,

²¹² We have weighted each providers' average call time using actual data from mobile providers on their total mobile customer bases as at June 2016.

²¹³ uSwitch March 2016 consultation response page 3.

²¹⁴ We also consider that one reason why uSwitch's data would show a longer average call time is because, for switchers who make more than one call, it aggregates total time across multiple calls. We consider the issue of multiple calls in the next section. It is also possible that uSwitch's data might include conversations that we would not strictly categorise as a switching conversation (e.g. a failed negotiation conversation).

there is a risk that switchers who experienced difficulties with the process had shorter calls than those who actively engage in save activity. Consequently, and recognising this is a simplification, we consider that it is reasonable to take a more conservative approach to our time savings estimate by using median call lengths.²¹⁵

- A5.19 On the basis of median call times, we estimate that the time taken to successfully request a PAC under the status quo, that would be saved by a switcher who used our process reforms instead of calling their losing provider, is 7.7 minutes. The equivalent time for successful terminations is 7.4 minutes. Of this, 6.2 and 5.9 minutes respectively relate to the time spent speaking to the losing provider. In addition, we assume that it takes a consumer roughly 1 minute to find the losing provider's customer services telephone number. Overall, therefore, we assume that it currently takes a switcher around **8.7 minutes** to progress a switch when requesting a PAC and **8.4 minutes** when terminating a service.

Using Auto-Switch

- A5.20 We consider that, under Auto-Switch, a switcher requesting a PAC/N-PAC) by text would spend approximately 3 minutes to progress a switch on average. This assumes: 1 minute to find the relevant short-code to request a PAC/N-PAC) by text, 1 minute to send a request by text and 1 minute to read and understand the response text received from the losing provider, which – in addition to containing the relevant code – also includes information about the implications of switching.
- A5.21 We recognise that consumers might spend longer than 1 minute to understand the Switching Information, particularly customers on business tariffs. However, we are only seeking to estimate the component of the switchers' current interaction with their losing provider that would persist under Auto-Switch. We consider that switchers are likely to spend around a minute of their call with the losing provider understanding the switching implications. Any additional time spent doing this, outside of their call with the losing provider, will be equivalent under the status quo and Auto-Switch.
- A5.22 We also recognise that some switchers may use the Auto-Switch text and online request route and also make a call to the losing provider. However, our survey indicates that 32% of PAC switchers and 28% of C&R switchers had to call their losing provider more than once under the status quo.²¹⁶ We also note uSwitch's research which suggests the average customer had to contact their network twice, and 11% had to speak to their losing provider four or more times. As such, many switchers will still save a call even if they still call the LP as well as using Auto-Switch.
- A5.23 Additionally, when signing up with the gaining provider, switchers can request for the port/cancellation to be initiated at the point that their new SIM is activated. This saves a

²¹⁵ We also performed a different adjustment to take account of this risk, in which we calculated average call times having removed the longest 10% of calls. Call times under this adjustment were within 2% of median call times.

²¹⁶ BDRC 2017 slide 23.

further interaction with the gaining provider, relative to the status quo (where switchers signing up online or over the phone need to contact their gaining provider again to redeem their PAC). We do not have information on how long the PAC redeem process generally takes switchers, so we have not factored this into our quantitative time savings estimate. However, we note that this is a material source of understatement within our estimates.

A5.24 Finally, we assume that using the online route for Auto-Switch will not take longer than using the text route and we therefore apply the same time savings estimates to these switchers.

Overall position on time saved under Auto-Switch

A5.25 We estimate that the time-saving that a switcher would make, relative to the status quo, by using Auto-Switch to switch is roughly **5.7 minutes** for existing PAC switchers and **5.4 minutes** for existing C&R switchers. This is equivalent to a time saving for PAC switchers of 52p per switch, and 49p for C&R switchers.

Number of switchers that derive a time saving

A5.26 The number of switchers who will derive a time saving under our process reforms depends on:

- the proportion of switchers who are eligible for a time saving (because of the time it takes to request a PAC and / or cancel, under the status quo); and
- the proportion of this group that will use Auto-Switch, and therefore will save a call to their losing provider.

Proportion of switchers eligible for a time saving

A5.27 We could start by assuming that all switchers are potentially eligible for a time saving, regardless of the channel they use to request PAC and/or cancel. However, we recognise that some channels may be faster than requesting a PAC and/or cancelling a service by phone, and therefore there is a greater uncertainty over the time saving for this group of people. We consider it is appropriate to exclude switchers who currently request a PAC and/or cancel via email, webform or post, from our time saving calculation, as we do not have information about how long it currently takes to do this.

A5.28 We continue to include people requesting a PAC and/or cancelling in-store, as we understand that this channel still requires switchers to have a conversation with their losing provider (usually on the phone). We also continue to include people using a webchat route. Although we do not have direct information on the time taken to use webchat, we

consider that this route provides an opportunity for unwanted save activity by a customer service agent, and so we assume it takes switchers a similar time as the phone route.²¹⁷

A5.29 In our BDRC 2017 research, 81% of PAC switchers requested their PAC by phone, in-store or via webchat, while 51% of C&R switchers cancelled their service by phone, in-store or by webchat.²¹⁸ Based on these proportions, Figure A5.3 below summarises our estimate of the number of switchers that could potentially derive a time saving.²¹⁹

Figure A5.3: Estimated number of mobile switches per year by phone/in-store/webchat

PAC	C&R	Total
2.61m	0.97m	3.58m

Proportion of switchers that will use Auto-Switch

A5.30 The BDRC 2017 research provides evidence about the proportion of switchers who are likely to use Auto-Switch. The survey design is described in more details in Annex 7.

A5.31 We asked respondents whether they would use the text and online request routes of Auto-Switch to switch their mobile service, if they were available for free, rather than the way that they switched last time.²²⁰ Figure A5.4 presents respondents' answers.

²¹⁷ Furthermore, in our consultation on reforming the Triple-play switching process, we obtained data showing that the average time taken to cancel by webchat was longer than by phone (though we noted that it is not clear that consumers spend all this time engaging with a customer service agent as webchat can be undertaken in bursts while undertaking other activities). See §A8.42 of our Consultation on Triple-play switching, https://www.ofcom.org.uk/_data/assets/pdf_file/0016/54106/annex.pdf

²¹⁸ BDRC 2017 slides 25 and 26.

²¹⁹ We note that 4% of PAC switchers and 21% of C&R switchers said they did not remember the method they used last time to request PAC or cancel their service. We consider that at least some of these consumers could qualify for time-savings, but we do not include them in Figure A5.3.

²²⁰ We asked PAC switchers whether they would switch using the text route and the online route separately. For C&R switchers, we asked whether they would switch via either of these routes, if they were available.

Figure A5.4: Summary of stated take up of Auto-Switch, among those who used phone, in-store or web-chat routes²²¹

	Auto-Switch SMS n=1019 PAC switchers	Auto-Switch SMS/online n=1019 PAC switchers	n=385 C&R switchers
Definitely would	45%	46%	45%
Probably would	36%	37%	32%
Possibly/Possibly not	12%	14%	15%
Probably wouldn't	5%	2%	6%
Definitely wouldn't	2%	2%	2%
Net: 'would'	81%	82%	77%

- A5.32 The stated take-up rate for both the Auto-Switch text and online routes, based on those who would definitely or would probably use it, is 82% for PAC switchers and 77% for C&R switchers. We assume for the purposes of calculating take-up rates that respondents who gave the mid-point answer (possibly/possibly not) would not use them.
- A5.33 We recognise that some respondents who said they would use these routes under a hypothetical scenario may not actually do so, and would instead continue to progress their switch as they had done previously. For the purposes of our impact assessment, we have therefore adjusted the stated take-up rates presented in Figure A5.4 above to take account of this possibility. We use adjusted data as an estimate of the likely proportion of switchers that would derive a time saving. Recognising that there is uncertainty over this proportion, we have assumed, under our base case, that 80% of switchers who said they would *definitely* use Auto-Switch (text and online routes) will actually do so, and 20% of switchers who said they would *probably* use Auto-Switch (text and online routes) will actually do so. This implies that out of those switchers eligible for time saving, 44% of PAC switchers and 43% of C&R switchers would actually derive a time saving under full Auto-Switch.²²²
- A5.34 On this basis, and recognising the degree of uncertainty inherent in this exercise, we consider that our adjusted take-up rates (as set out in paragraph A5.34 above) are a reasonable reflection of the proportion of switchers who would derive a time saving under Auto-Switch. Figure A5.4 summarises our estimate of the number of switchers who will obtain a time saving under Auto-Switch, based on the take-up rates from our base case.

²²¹ These are the take-up rates for the specific sub-group of respondents who currently request PAC and/or cancel their service by phone, in-store or webchat i.e. the population who are eligible for a time saving by using our process reforms. See BDRC 2017 slide 93.

²²² BDRC 2017 slide 94.

Figure A5.4: Updated estimate of number of calls / webchats saved per year (million)

Take-up rate	PAC	C&R	Total
Base case (44% / 43%)	1.15	0.42	1.57

Summary of time savings estimates

A5.35 Figure A5.5 below summarises the main assumptions used, and the steps taken to estimate time savings.

Figure A5.5: Calculation of time savings benefits

Assumption	Base case
Number of switchers	PAC: 3.23 million C&R: 1.90 million
Proportion of switchers currently eligible for time saving	PAC: 81% C&R: 51% (Those who use phone / in-store / webchat routes to request PAC / cancel)
Proportion of switchers out of those eligible who will derive time saving under full Auto-Switch	PAC: 44% C&R: 43%
Current PAC request / termination call lengths (Based on the median call length)	1 minute to find number + 7.7 minutes on phone (PAC) 7.4 minutes on phone (C&R)
Length of time to use new process	3 minutes
Time saved per switch	5.7 minutes (PAC) 5.4 minutes (C&R)
Value of time (DfT non-working time)	£5.51
Yearly aggregate time saving delivered by Auto-Switch, £ million	PAC: 0.60 C&R: 0.20
Aggregate time saving delivered by Auto-Switch, 10-year NPV, £ million	PAC: 5.1 C&R: 1.8 Total: 6.9

A5.36 Based on our assumptions, we estimate that the aggregate time saving delivered by Auto-Switch (over 10 years in NPV terms) is **£6.9 million**. This reflects a time saving of 52.3p per

switcher for 1.15 million PAC switchers and a time saving of 49.6p per switcher for 0.42 million C&R switchers.

Stakeholder's comments and our response

- A5.37 In its response to the May 2017 consultation Virgin made two points regarding our time savings estimates.
- A5.38 Firstly, Virgin suggested that even after we engaged further with stakeholders and reduced our original estimates of call time savings, we still overstated them.^{223 224} In its response to the March 2016 consultation, Virgin suggested we overstated the call time *savings* by 50-80%.²²⁵
- A5.39 We are of the view that our revised estimates of average call time savings are unlikely to be overstated, and that we have adequately adjusted them in light of stakeholders' comments.
- A5.40 As we described in Annex 10 of the May 2017 consultation, we have reduced our initial estimates of average *call time* to request a PAC and/or terminate a service from 15.4 minutes in the March 2016 consultation to 7.7 minutes for a PAC request and 7.4 minutes per cancellation. This is a reduction of about 50%.^{226 227}
- A5.41 This reduction in our initial estimates of average *call time* together with the fact that we have not revised the 3 minutes we expect a customer would take to use the new request routes under Auto-Switch means that our average *call time savings* have fallen by 57% for PAC requests (13.4 minutes in March 2016²²⁸ to 5.7 minutes in May 2017²²⁹), and by 60% for cancellations (13.4 minutes in March 2016²³⁰ to 5.4 minutes in May 2017²³¹). Therefore, we have largely accepted Virgin's comment that our *call time savings* from the March 2016 consultation could have been overstated by as much as 50-80%.²³² We do not consider that our estimates should be reduced further or that they are overstated.

²²³ Virgin May 2017 consultation response, §30.

²²⁴ Relatedly, O2 said that customers are likely to spend more than a minute assessing the Switching Information they would receive under Auto-Switch (O2 May 2017 consultation response §60). As we said in May 2017 (see §A10.37), we recognise that consumers might spend longer than 1 minute to understand the Switching Information. However, we are only seeking to estimate the component of the switchers' current interaction with their losing provider that would persist under Auto-Switch. We consider that switchers are likely to spend around a minute of their call with the losing provider understanding the switching implications. Any additional time spent doing this, outside of their call with the losing provider, will be equivalent under the status quo and Auto-Switch.

²²⁵ Virgin March 2016 consultation response, §12.

²²⁶ May 2017 consultation, Annex 10, §A10.13 and §A10.36.

²²⁷ Additionally, this is significantly lower than the 25 minutes figure suggested by uSwitch's research (See §A5.17 above).

²²⁸ March 2016 consultation, Annex 7, §A7.19.

²²⁹ May 2017 consultation, Annex 10, §A10.45.

²³⁰ March 2016 consultation, Annex 7, §A7.19.

²³¹ May 2017 consultation, Annex 10, §A10.45.

²³² Virgin March 2016 consultation response, §4.12 and Virgin May 2017 consultation response, §30.

Annexes 2-11: Consumer Switching

Decision on reforming the switching of mobile communications services

- A5.42 Secondly, Virgin submitted that PAC switchers' WTP for Auto-Switch (text and online) under our May 2017 high-case scenario (i.e. £0.44)²³³ implies a time savings of 4 minutes and 45 seconds, which is lower than our revised times savings of 5.7 minutes²³⁴.
- A5.43 We disagree. The WTP estimate of 44p Virgin was referring to is an average across all switchers (and takes into account zero valuation of those switchers that will not use Auto-Switch), whereas the time saving of 5.7 minutes applies only to those switchers who will use Auto-Switch, which makes these two numbers not directly comparable.

²³³ To be precise, £0.44 is the down-weighted average WTP for Auto-Switch (text/online) of PAC switchers. It was derived by taking 80% of the amounts respondents who would definitely use Auto-Switch were willing to definitely pay, 40% of the amounts respondents who would probably use Auto-Switch were willing to definitely pay, and assigning zero value to everyone else. See Figure A11.4 in Annex 11 of the May 2017 Consultation, available here: https://www.ofcom.org.uk/data/assets/pdf_file/0008/102050/Annexes-5-12-of-consumer-switching-consultation.pdf

²³⁴ See §A10.45 in Annex 10 of the May 2017 consultation.

A6. Calculation of reduction in double-paying

Introduction

- A6.1 Double-paying occurs when a consumer continues to pay the losing provider for a period after switching provider, due to being required to pay charges for the duration of their notice period.
- A6.2 In Section 5 and Annex 4, we set out the impact that prohibiting charging for notice after the switching date would have on PAC switchers and C&R switchers who take up Auto-Switch. We said that one such impact would be a reduction in the double payments switchers incur. This annex sets out the methodology we have used to estimate the total reduction in double-paying that would occur.
- A6.3 Specifically, we expect prohibiting charging for notice after the switching date will eliminate double paying for existing PAC switchers.²³⁵ When combined with our Auto-Switch reform we expect it to reduce double paying amongst existing C&R switchers who take up Auto-Switch. We present the estimated reduction for each group of switchers separately in this Annex.

Reduction in double-paying for existing PAC switchers.

- A6.4 In our May 2017 consultation, we said that our proposal to prohibit charging for notice after the switching date would eliminate double-paying for all existing PAC switchers. We estimated that this was equivalent to a reduction in double-paying of £8 million per year, or **£68.9 million** (10-year NPV) based on a discount rate of 3.50%.²³⁶
- A6.5 We remain of the view that prohibiting charging for notice after the switching date would eliminate double-paying for PAC switchers, and stakeholders did not comment specifically on the methodology used to quantify this reduction in double-paying. We have continued to quantify this impact in the same way as in our May 2017 consultation.

Estimate of reduction in double-payments

- A6.6 To estimate the total reduction in double paying for existing PAC switchers, we assume that the PAC switchers who will benefit from a reduction in double-paying are limited to existing PAC switchers who are on a post-pay contract and are outside of a minimum contract period, and who are switching away from providers who currently impose notice

²³⁵ Double-paying incurred during the period after the new SIM is activated but before the number is ported out is not addressed, but this is to a large extent in the control of the customer and this element of double paying is not in any case captured in our estimates of the total amount of double-paying currently incurred under the status quo.

²³⁶ May 2017 consultation §A9.7.

Annexes 2-11: Consumer Switching

Decision on reforming the switching of mobile communications services

period charges after the switching date. The total number of such PAC switchers is currently 1.22 million.

- A6.7 We then multiply the average number of days of double paying that we expect to be avoided as a result of our reforms (20.04 days) by the average daily spend on mobile services of 33p to obtain average benefit of £6.12 per affected switcher.
- A6.8 Based on these calculations, our revised estimate of the reduction in double-paying for PAC switchers is £8.0 million per year, or around **£68.9 million** over ten years (in NPV terms).
- A6.9 The underlying calculations are summarised, step by step in Figure A6.1 below.

Figure A6.1: Calculations of reduction in double-paying for existing PAC switchers

Assumption / element of calculation	Row	Value	Comment
Number of PAC switchers per year	A	3.23m	This is the actual number of non-bulk PAC switches from November 2015 to October 2016 ²³⁷
Percentage of PAC switchers on post-pay contracts	B	85.0%	Based on the BDRC 2016 omnibus
Percentage of post-pay PAC switchers who switch outside their minimum contract period (MCP)	C	66.4%	These are switchers who can be subject to notice period payments ²³⁸
Proportion of out-of-contract post-pay subscribers switching away from mobile providers which do not currently charge beyond the port-out date	D	33.1%	These are switchers who already do not incur double-payments ²³⁹
Number of PAC switchers who will avoid double-payments after our reforms are implemented	E	1.22m	Calculation E = A x B x C x (1-D)
Current average period of double paying, days	F	20.04 ²⁴⁰	The average number of days between the date of port-out and the date that their airtime contract was charged up to ²⁴¹
Average daily spend, £	G	0.33	Actual spend on in-bundle mobile services by post-pay customers who are outside of their MCP ²⁴²
Average saving per affected PAC switcher, £	H	6.61	Calculation H = F x G
Total annual benefit from reduction in double-paying for PAC switchers, £m	I	8.0	Calculation I = E x H
Benefit from reduction in double-paying for PAC switchers, 10-year NPV, £m	J	68.9	Calculated using NPV formula and 3.50% discount rate

²³⁷ The data was obtained from Syniverse under formal information powers.

²³⁸ This is based on data requested from operators on the proportion of PAC switchers giving notice between 11 and 17 April 2016 who were outside of their MCP when they gave notice. As noted in our July 2016 consultation, this excludes

Reduction in double-paying for C&R switchers

A6.10 In our May 2017 consultation, we estimated that the benefit in terms of reduction in double-paying for existing C&R switchers who will go on to use Auto-Switch would be between £15.0 million and £21.7 million over ten years (in NPV terms), with our base case being £18.4 million.²⁴³

Estimate of double payments

A6.11 We have estimated the amount of double-paying incurred by existing C&R switchers using broadly the same methodology as for PAC switchers (set out above):

- As set out in our May 2017 consultation, we estimate the number of C&R switchers is 1.90 million per year.²⁴⁴ Based on BDRC 2016 omnibus data, we estimate that the proportion of C&R switchers that are on post-pay contracts is around 71% (approximately 1.35 million). Of these, around 63% switch outside their minimum contract period (MCP).²⁴⁵ Therefore, we estimate that the total number of C&R switches that could involve double paying is 0.85 million.²⁴⁶
- As set out in our July 2016 and May 2017 consultations, we cannot use operator data to estimate the average contract overlap duration specifically for C&R switchers because operators do not hold information on whether a consumer who cancels their service is switching to another provider, and, if so, when the new service begins. We therefore assume that C&R switchers incur the same contract overlap duration as PAC

switchers giving notice within the final month of their MCP, which creates a risk of understating the total amount of double-paying experienced by PAC switchers.

²³⁹ We understand that Vodafone, O2 and TalkTalk currently do not charge notice beyond the port-out date for PAC switchers if a customer is outside the minimum contract period.

²⁴⁰ We revised this number compared to the July 2016 consultation in which we said the average number of days was 20.3. The corrected figure used in May 2017 was 20.04 days. Our reforms specify that the consumers will no longer be charged after the port-out date, thus we calculate the duration of the double paying as number of days between the port-out date and the last date for which a customer is charged by the losing provider.

²⁴¹ This is based on data from operators obtained in April 2016.

²⁴² We consider this to be the most relevant metric for the purposes of estimating double-paying. We have calculated a weighted average of the daily spend from the major providers which we understand currently charge for a notice period after the switching date ([£]). Data is for Q2 2016. One of these providers [£] was unable to split in-bundle spend for 'in-contract' and 'out of contract' customers. However, the average in-bundle spend for all customers was comparable to [£], so we have used [£] average daily spend as a proxy.

²⁴³ May 2017 consultation, Annex 9, Figure A9.2.

²⁴⁴ May 2017 consultation, Annex 10, Figure A10.1.

²⁴⁵ Requirements to serve and pay out notice generally apply where a consumer is beyond the MCP, when consumers can switch provider without incurring other contract related charges such as an Early Termination Charge (ETC). Notice period requirements may also apply where the remaining time to reach the MCP is less than the notice period requirement. For example, a consumer seeking to switch who has 15 days left on their contract term may be subject to an ETC relating to cancelling 15 days early, plus 15 days' notice, which make up a 30-day notice period. For the avoidance of doubt our concern does not extend to the effects of minimum contract terms or ETCs.

²⁴⁶ We understand that all operators charge 30 days' notice when a consumer is simply terminating their service rather than porting their number, so all post-pay out-of-contract C&R switches could involve double-paying.

switchers who are subject to notice period payments beyond the port-out date, (i.e. an average of 20 days).²⁴⁷

- As set out in Figure A6.1 above, we assume that the average daily harm from double-paying is 33p.

A6.12 On this basis, we estimate that C&R switchers incur around £5.6 million in double paying per year, or £48.4 million over ten years (in NPV terms).

Reduction in double payments

A6.13 As we have set out above, our reforms would not eliminate double-paying for all C&R switchers. This is because our reform to prohibit charging for notice after the switching date only applies where the C&R switcher uses the Auto-Switch process, so switchers who continue using a C&R arrangement and do not use Auto-Switch may still incur double-payments. However, existing C&R switchers who take up Auto-Switch (whether they become PAC switchers due to the improved porting process, or decide not to port their number but use the N-PAC switching process), will be able to benefit from the reduction in double-paying.

A6.14 The BDRC 2017 research provides direct evidence on the likely proportion of C&R switchers who would use Auto-Switch, and therefore avoid double-paying. Thirty-nine percent of existing C&R switchers stated that they would definitely use Auto-Switch, and a further 35% said they probably would use it.²⁴⁸ This suggests that around 74% of existing C&R switchers might use Auto-Switch in the future and avoid double-paying, which translates to around 0.63 million people (out of 0.85 million existing post-pay out-of-contract C&R switchers who currently experience double-paying). If all these switchers achieved a reduction in the double paying period from the current 20.04 days to zero days post-reform, this would result in around a £4.2 million reduction in double-paying per year, or £35.8 million over ten years (in NPV terms).²⁴⁹

A6.15 However, for the purposes of the impact assessment, and using a cautious approach to quantifying potential benefits, we have adjusted stated take-up of Auto-Switch. We have set out our detailed assumptions in respect of adjusted take-up in Annexes 5 and 7. Our base case assumption²⁵⁰ on adjusted take-up values results in an estimate of 38% of C&R switchers who would use the full Auto-Switch process, which implies that around 0.32 million (out of 0.85 million) C&R switchers would benefit from reduction in double-paying

²⁴⁷ We note that BDRC 2015 Quantitative Study showed that on average C&R switchers experienced longer contract overlap than PAC switchers (slide 53), therefore we consider this assumption to be conservative.

²⁴⁸ BDRC 2017 slide pack, slide 13.

²⁴⁹ This benefit will be even higher if at least some respondents who replied “possibly/possibly not” to the question on their potential use of Auto-Switch will actually use it in the future.

²⁵⁰ For the purposes of calculating quantified benefits for the impact assessment, and in order to be conservative in our base case assumptions, we assume that in our base case only 80% of respondents who stated they would definitely use Auto-Switch and only 20% of those who said they would probably use it, would actually do so post-reform.

per year. Assuming an average reduction in double paying period from 20.04 to zero days, under our **base case scenario** the total reduction in double-paying will be around £2.1 million per year, or **£18.3 million** over ten years (in NPV terms).²⁵¹

A6.16 Figure A6.2 sets out the total estimated reduction in double-paying for existing C&R switchers who will use Auto-Switch over ten years (in NPV terms) in the case of unadjusted take-up as well as our base case.²⁵²

Figure A6.2: Reduction in double-paying for current C&R switchers who will use Auto-Switch

Scenario	Underlying assumption	Adjusted take-up	Reduction in double-paying, £m, 10-year NPV
Unadjusted take-up	100% of respondents who said they would definitely or probably use Auto-Switch are taken into account. We assume that all other respondents will not use the new process.	74%	35.8
Base case	80% of respondents who said they would definitely use Auto-Switch and 20% of those who said they would probably use it are taken into account. We assume that all other respondents will not use the new process.	38%	18.3

A6.17 We note that our prohibition on charging for notice was not included in the process descriptions of Auto-Switch in our survey, so respondents would not have taken this into account when expressing their likelihood of taking up it up. As such, our estimates might understate the proportion of C&R switchers who would take up Auto-Switch if implemented in conjunction with our notice period reforms, and consequently they could understate the amount of double-paying that would be addressed.

A6.18 However, we also note it is possible that this estimate might overstate the *incremental* reduction in double-paying delivered by Auto-Switch, if some C&R switchers who said they would use Auto-Switch would actually become a PAC switcher (and thereby avoid double-paying) if we solely introduced a prohibition on charging for notice after the switching date, even in the absence of the Auto-Switch reforms. We are unable to estimate a

²⁵¹ A slight difference from the number of £18.4 million presented in the May 2017 consultation is due to the fact that in our updated calculations we use more figures after the decimal point for the various elements of the calculations (e.g. average daily spend estimate used in actual calculations is £0.3278 and not 33p).

²⁵² Note that this estimate does not include any benefit from the reduction in double paying that current C&R switchers will be able to obtain if they decide to obtain N-PAC by phone (as our take-up of Auto-Switch numbers only include those who will obtain N-PAC by text or online).

proportion of current C&R switchers who might do so using the responses to the BDRC survey, but we consider that it is unlikely to be large group as we continue to believe that for a current C&R switcher to become a PAC switcher a considerable improvement of the porting process is required, and Auto-Switch will deliver such an improvement.²⁵³

Stakeholders' responses to May 2017 consultation

- A6.19 We have received a number of responses to our May 2017 consultation regarding the methodology we have used to calculate benefits to consumers related to reducing double paying.
- A6.20 O2 queried whether we have excluded pay-as-you-go consumers from our calculations²⁵⁴. As we explained in paragraphs A9.6 and A9.19 of Annex 9 of the May 2017 consultation, we excluded pay-as-you-go customers from the calculation of the double paying benefit. These consumers do not have a notice period and therefore we do not attribute any double paying benefit from our reforms to these consumers.
- A6.21 [O2], while agreeing with our assessment of a reduction in double paying as a consumer benefit, queried the reduction in out-of-contract average daily cost from 64p (the estimate we used in the July 2016 consultation) to 33p (the estimate we used in the May 2017 consultation and in this statement). As explained in above, our estimate of 33p per day is based on the data we received from the mobile operators under our formal powers. We are of the view that this set of data is the most appropriate for this calculation.

²⁵³ We examined data from the BDRC 2017 survey as well as from the Switching Tracker 2017 and compared PAC-to-C&R switchers ratios among switchers who switch away from operators who charge for notice period beyond the switching date and among switchers from operators who do not charge after the port-out date. We did not find any significant difference, and while this evidence is only indicative, it suggests that the ability to avoid double paying on its own is not currently sufficient to encourage more switchers to port their numbers.

²⁵⁴ O2 May 2017 consultation response §78 (iii) and footnote 65.

A7. Estimating take-up of Auto-Switch and the benefits of introducing Auto-Switch using a WTP approach

- A7.1 We commissioned consumer research (the “BDRC 2017 research”) to estimate the benefits from implementing Auto-Switch.²⁵⁵
- A7.2 This Annex describes how we used the survey results obtained from the BDRC 2017 research to derive estimates for two of the key inputs into our analysis.
- A7.3 The first of these inputs is how many switchers would be expected to take-up Auto-Switch. This defines the group of people who will benefit from the easier process. It also affects how much double-paying would be avoided as a result of introducing Auto-Switch ²⁵⁶ and the estimate of operators’ cost savings.²⁵⁷
- A7.4 The second of these inputs is the total amount switchers are willing to pay to take-up, or use, Auto-Switch. In principle, this captures the value of the difficulties that switchers would avoid when using Auto-Switch ²⁵⁸ and as such we consider this provides a better estimate of the benefit Auto-Switch will deliver than the estimates derived using the time-savings approach.²⁵⁹
- A7.5 The Annex is structured as follows:
- We first provide a brief description of the BDRC 2017 research, focusing on the questions on which our analysis is based;
 - Next, we explain how we have estimated take-up of Auto-Switch;
 - Next, we explain how we have estimated the total amount switchers are willing to pay to use Auto-Switch;
 - Finally, we set out how this methodology differs from that we adopted in our May 2017 consultation and explain why we have changed our approach.

²⁵⁵ In analysing the benefits of Auto-Switch we focus on the provisions which enable switchers to obtain a PAC/N-PAC code by text or via an online account. The research also explored switchers willingness to take-up GPL and the value respondents attributed to it. In this Annex we focus on respondents’ attitude towards Auto-Switch. Please see Annex 11 of the May 2017 consultation for detailed analysis relevant to GPL.

²⁵⁶ Since this depends on how many C&R switchers would take up Auto-Switch.

²⁵⁷ See Annex 3.

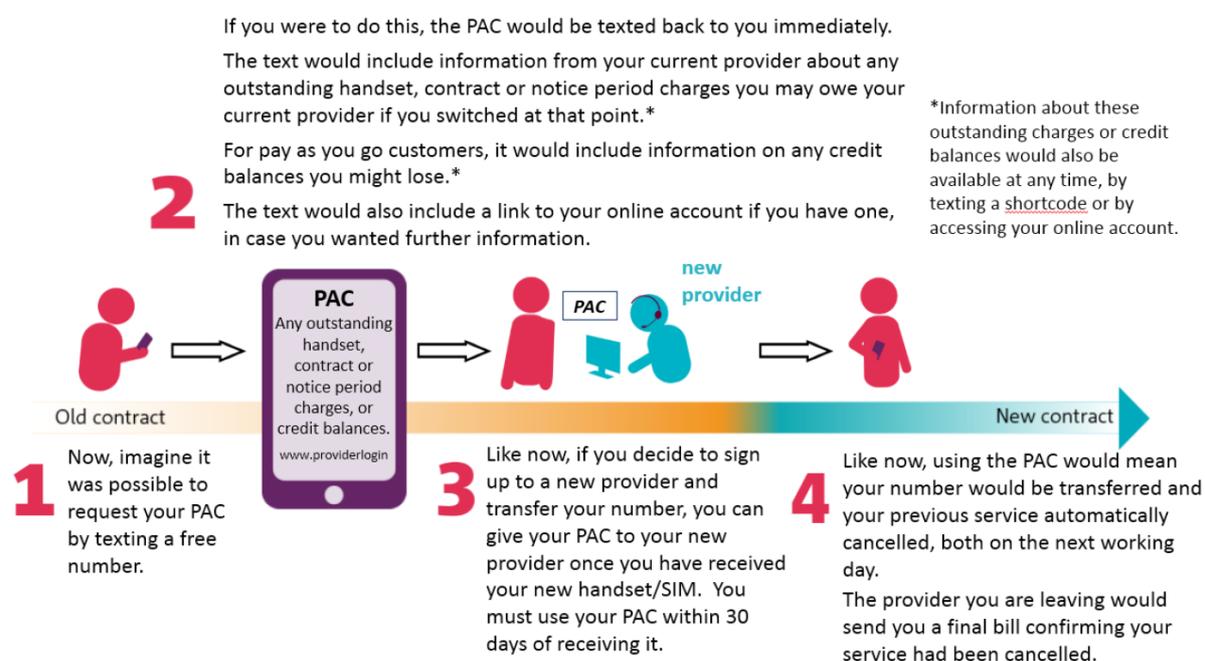
²⁵⁸ For this reason, we consider that estimating reduction in harm via consumer WTP is an alternative to a time savings approach. However, due to the way in which the survey was designed, we do not consider that it will capture the potential benefits to C&R switchers from reduced double-payments or loss of service. Therefore, these benefits are separate to any WTP-based estimate.

²⁵⁹ It also relates specifically to the options we proposed.

The BDRC 2017 Research: Survey Methodology

- A7.6 In order to estimate usage and the benefits of Auto-Switch (specifically the text and online routes), we commissioned BDRC to undertake consumer research into switchers' experience and attitudes towards alternative switching processes.²⁶⁰ BDRC conducted an online survey of 1,251 PAC switchers and 758 C&R switchers during January and February 2017.
- A7.7 The survey presented respondents with a series of diagrams (see Figure A7.1 below as an example)²⁶¹, which set out the steps that would be necessary to switch via Auto-Switch.²⁶² Our descriptions did not mention any changes to notice period policies because we were seeking to estimate the incremental reduction in harm delivered by Auto-Switch (i.e. the ability to obtain a PAC and NPAC by text or online), over and above our proposal to prohibit charging for notice after the switching date. As we explain below, this means that the estimates may understate take-up.

Figure A7.1: Description of Auto-Switch text route in online survey for PAC switchers



- A7.8 Having been presented with the series of diagrams, we asked respondents whether they would take-up Auto-Switch, if it was available for free. Specifically:

²⁶⁰ We defined a switcher as someone aged 16+ who had changed their mobile provider in the last 18 months. PAC switchers are defined as those who kept their number last time they switched. C&R switchers are defined as those who changed their number last time they switched.

²⁶¹ The diagram presented below was shown to PAC switchers. We showed slightly different diagrams to C&R switchers which explained how they could switch without transferring their number. BDRC 2017 slide 71.

²⁶² The survey also presented respondents with diagrams which set out the steps necessary to switch via GPL and the results of this analysis are discussed in Annex 9.

- PAC switchers were asked how likely they would be to request a PAC via a free text message rather than the way they requested this last time; whereas
 - C&R switchers were asked how likely they would be to request a code to switch via a free text message or via their online account, rather than the way they switched last time.
- A7.9 Respondents could answer as follows: i) Definitely wouldn't; ii) Probably wouldn't; iii) Possibly would / possibly wouldn't; iv) Probably would; and v) Definitely would. Any respondent who answered iii) to v) was presented randomly with one of the following price points: 50p; £1; £2; £5; and £10, and asked whether they would pay a price, in turn²⁶³, until they said they would probably or definitely not pay that price (or until they reached the maximum price of £10).
- A7.10 PAC switchers were also asked a follow-on question to determine their interest in using the online route to request a PAC code. Specifically:
- Anyone who said they wouldn't request their PAC code via text was asked how likely they would be to request their PAC via an online account, if this was free. Those who indicated they would or might were asked questions to understand their willingness to pay to do so.
 - Anyone who said they would or might request their PAC code via text message was asked how likely they would be to request their PAC code via their online account rather than texting a free number, if this was also free. In the interests of keeping the number of WTP scenarios to a manageable number, their willingness to take this option up at different price points was not explored.
- A7.11 Some of the respondents who said they would take-up Auto-Switch for free said they would not take-up Auto-Switch if they were required to pay 50p or more but that this was because they did not believe they should have to pay anything, rather than because it was not of value to them.

Take-up of Auto-Switch

Take-up of Auto-Switch amongst survey respondents

- A7.12 Under our reforms, usage of Auto-Switch will be free for consumers. Figure A7.2 summarises what respondents told us about whether they would take-up Auto-Switch if it was available for free.
- A7.13 The left-hand column summarises the responses PAC switchers provided in respect of the text only version of Auto-Switch, whereas the middle and right-hand columns summarise

²⁶³ If they said they probably or definitely *would not* pay to a price point, then they were not shown a higher value; and if they said they definitely *would* pay to a price point, they were not shown a lower value.

the responses provided by PAC and C&R switchers respectively in respect of the text and online version of Auto-Switch.²⁶⁴

Figure A7.2: Summary of stated responses to likely take up of Auto-Switch.

	Auto-Switch SMS	Auto-Switch SMS/online	
	n=1251	n=1251	n=758
	PAC switchers	PAC switchers	C&R switchers
Definitely would	43%	43%	39%
Probably would	35%	36%	35%
Possibly/Possibly not	15%	17%	18%
Probably wouldn't	4%	2%	6%
Definitely wouldn't	2%	2%	3%
Net: 'would'	78%	80%	73%

Source: BDRC 2017 slide pack, slide 13.

A7.14 Taking the responses at face value, this indicates that:

- 78% of PAC switchers definitely or probably would use a text only version of Auto-Switch (80% if the online route is also included).
- 73% of C&R switchers definitely or probably would use a text and online version of Auto-Switch.

²⁶⁴ As explained above, in contrast to C&R switchers, PAC switchers were first asked whether they would take-up a text-only version of Auto-Switch. Then those who answered “definitely would”, “probably would” or “possibly/possibly not” to the text option were asked whether they would prefer to use an online version of Auto-Switch **compared to the text option**, whereas those who said they “probably wouldn’t” or “possibly wouldn’t” use the text option were asked about their attitude towards the online option **compared to the way they switched last time**. In order to obtain a measure of take-up for Auto-Switch (text and online) we combined the answers to these questions using the following principles: (i) Those who stated that they would definitely or probably use text relative to the status quo, were classed as definitely or probably users respectively. Their responses to the online question were not taken into account; (ii) Those who stated that they definitely or probably would not use text relative to the status quo, but would definitely or probably use online relative to the status quo were treated as definitely or probably users based on their online response; (iii) Those who stated that they would possibly/possibly not use text relative to the status quo but definitely or probably would prefer online to text were counted as “possibly/possibly not” for the combined text/online option. We believe this approach to be conservative. It is possible that some respondents who answered “possibly/possibly not” when comparing a text option relative to the status quo, would definitely or probably use the online option over the status quo. However, as they were only asked to compare the online route to the text route, we cannot state this with confidence. In order to be conservative, we have based likelihood of use only on their answer to the text option.

Adjusted take-up of Auto-Switch amongst survey respondents

- A7.15 We recognise the need to exercise some caution when interpreting survey evidence on take-up. In this specific case, there are reasons why the survey responses might over-state take-up and other reasons why the survey might under-state take-up, and it is unclear which effect dominates.
- A7.16 On the one hand, respondents may have over-stated their propensity to use Auto-Switch as it is easier to respond to a survey question than to change behaviour in reality. This is known in the research literature as “hypothetical bias”.
- A7.17 On the other hand, this specific survey may understate take-up as gaining providers are likely to face incentives to promote the Auto-Switch process, which would be expected to enhance take-up of the process amongst existing switchers.²⁶⁵ This is not captured in the survey based estimates. If gaining providers make Auto-Switch the default way to change provider, then take-up may be much higher than the survey estimates. The survey may also understate take up because our descriptions did not mention any changes to notice period policies.
- A7.18 Whilst we consider that there are specific factors in this case that may lead to stated take-up being understated, in order to address the risk of hypothetical bias, it is common practice in such stated preference surveys to down-weight responses to take into account any propensity to overstate actual behaviour.
- A7.19 Most of the literature on the impact of hypothetical bias takes place in the context where consumers have to pay for the good in question, rather than where it is available at zero cost. Nonetheless, we consider that it is relevant for this case as it is assessing whether consumers who state that they would take-up a product at a given price (in this case, zero) will actually do so in reality.
- A7.20 Several academic studies have recommended addressing hypothetical bias by restricting the analysis to respondents who said they were “definitely” sure that they would pay their stated value, on the basis that this provides a much closer approximation to observed outcomes than taking all those who said that they may buy the product.²⁶⁶ Taken at face

²⁶⁵ Under the status quo, many consumers who wish to port their number when switching are required to speak to their losing provider to obtain a PAC code. As the PAC conversation is a retention opportunity for the losing provider, gaining providers are not incentivised to encourage switchers to port their number. By contrast, under our reforms, switchers who use Auto-Switch will be less likely to speak to their losing provider, and so gaining providers have a greater incentive to encourage switchers to use Auto-Switch.

²⁶⁶ A number of studies, such as Blumenschein et al. (2008, 2001, 1998); Champ et al. (2009); and six of the studies reviewed by Loomis (2014), have found that actual WTP is closely approximated by focusing only on individuals who are “definitely sure” that they would be willing to pay for the good or service. These studies used a wide range of candidate public and private goods, such as: sunglasses; health programmes for diabetes and asthma; and donating to save an endangered bird. See: (i) Blumenschein, Karen, Glenn C. Blomquist, Magnus Johannesson, Nancy Horn, and Patricia Freeman (2008), “Eliciting Willingness to Pay without Bias: Evidence from a Field Experiment,” *The Economic Journal* 118, 525 (January), pages 114-137; (ii) Blumenschein, Johannesson, Krista K. Yokoyama, and Patricia R. Freeman (2001), “Hypothetical versus Real Willingness to Pay in the Health Care Sector: Results from a Field Experiment,” *Journal of Health*

value, this would imply that we should derive our estimates of take-up using only those respondents who said they were definitely prepared to take-up Auto-Switch. However, we also note that other academic studies have found that restricting the analysis to respondents who were definitely sure can overcorrect for hypothetical bias, leading to an underestimate of actual purchase behaviour.²⁶⁷

- A7.21 Whilst there is no agreed methodology on the best approach to take, the academic literature generally suggests that we should take into account all those respondents who told us they would “definitely” take-up something at a given price. There is less consensus on how much weight to place on the respondents who told us they would “probably” pay a given amount but it seems reasonable under a base case to take into account some, but not all, of these respondents.²⁶⁸
- A7.22 We considered a range of different approaches to down-weight the responses and, on the advice of our market research agency, ultimately adopted an 80/20 approach whereby we assume that 80% of those who said they would definitely use Auto-Switch would actually take it up and that 20% of those who said they would probably use Auto-Switch would actually take it up. This is one method²⁶⁹ to adjust for hypothetical bias which we consider is conservative given that a reasonable interpretation of the economic academic literature may suggest taking 100% of those who said they would definitely use Auto-Switch, along with some of those who would probably take it up.
- A7.23 If we apply this adjustment to the data described in Figure A7.2, it has the effect of reducing take-up of Auto-Switch of all switchers; take-up of PAC switchers is reduced from 80% to 42% and take-up of C&R switchers is reduced from 73% to 38% (see Figure A7.3).

Economics 20, 3 (May), pages 441-457; (iii) Blumenschein, Karen, Johannesson, Blomquist, Bengt Liljas, and Richard M. O’Conor (1998), “Experimental Results on Expressed Certainty and Hypothetical Bias in Contingent Valuation,” *Southern Economic Journal* 65, 1 (July), pages 169-177; (iv) Champ, P. A., R. Moore, and R. C. Bishop (2009), “A Comparison of Approaches to Mitigate Hypothetical Bias,” *Agricultural and Resource Economics Review*, 38, pages 166–180; and (v) Loomis (2014), “Strategies for Overcoming Hypothetical Bias in Stated Preference Surveys,” *Journal of Agricultural and Resource Economics*, 39, pages 134-46.

²⁶⁷ For instance, Johannesson et al (1998, 1999) and two of the studies reviewed by Loomis (2014). See: (i) Johannesson, M., Liljas, B. and Johansson, P.-O. (1998), “An experimental comparison of dichotomous choice contingent valuation questions and real purchase decisions”, *Applied Economics*, 30, 5 (May), pages 643–7; (ii) Johannesson, M., Blomquist, G.C., Blumenschein, K., Johansson, P.-O., Liljas, B., and O’Conor, R.M. (1999) “Calibrating Hypothetical Willingness to Pay Responses,” *Journal of Risk and Uncertainty*, 18, 1, pages 21–32; and (iii) Loomis (2014). “Strategies for Overcoming Hypothetical Bias in Stated Preference Surveys,” *Journal of Agricultural and Resource Economics*, 39, 1, pages 34-46.

²⁶⁸ We are aware of some studies that have found that only taking into account respondents who say they would “definitely” take-up a product/service at a given price can under-correct for hypothetical bias, leading to an overestimate of respondents’ actual WTPs. However such studies e.g. those referenced in Loomis (2014) are the exception.

²⁶⁹ In our May 2017 consultation, various alternative down-weights were considered e.g. 70/30, 70/30/10 (taking 10% of the responses to the mid-point i.e. “possibly would/possibly wouldn’t”) and 60/40. We concluded that an 80/20 adjustment was reasonable, as the error margins of the adjusted data broadly encompass the results produced by applying the alternative weights noted.

Figure A7.3: Adjusted take-up of Auto-Switch

Scenario	Auto-Switch (text and online)	
	PAC switchers	C&R switchers
Base case (80:20)	42.0%	38.0%

Number of switchers who would take up Auto-Switch

- A7.24 In order to estimate the total number of switchers per year who would take up Auto-Switch we apply the estimated take-up percentages described in Figure A7.3 to the number of PAC and C&R switchers per year.²⁷⁰
- A7.25 In order to obtain the number of PAC switchers per year, we obtained data from Syniverse under our formal information powers, which showed that there were 3.23 million non-bulk²⁷¹ PAC switches between October 2015 and September 2016.
- A7.26 In order to estimate the number of C&R switchers, we used the BDRC 2016 omnibus data. This survey reports that 37% of consumers did not keep their number when switching mobile provider in the 12 months prior to interview (i.e. around 63% switched via PAC).²⁷² Assuming there are 3.23 million PAC switchers a year (i.e. switchers who keep their number), we estimate that there are around 1.90 million C&R switchers per year.²⁷³
- A7.27 Figure A7.4 summarises the number of switchers we estimate will use Auto-Switch each year if we apply the adjusted take-up ratios derived above to the estimated number of switchers per year.

²⁷⁰ Please note that the BDRC survey is representative of adult (aged 16+) mobile switchers, whereas the Syniverse data we used to estimate the number of actual switchers per year includes some business users and those aged under 16. By applying the BDRC survey results to the Syniverse data we assume that the behaviour of adult switchers can be extrapolated to the business users and switchers under 16 included in our estimate of the total number of switchers.

²⁷¹ Non-bulk ports are defined as less than 25 numbers being ported.

²⁷² The BDRC 2017 survey suggests a similar proportion (38% of C&R switchers).

²⁷³ This is calculated as $(3.23\text{m} / 0.63) \times 0.37 = 1.90\text{m}$.

Figure A7.4: Number of switchers who would use Auto-Switch²⁷⁴

	Existing number of switchers	Switchers who will use Auto-Switch	Switchers who would keep their number using Auto-Switch	Switchers who would change their number using Auto-Switch
PAC switchers	3.23 million	1.35 million	1.35 million	-
C&R switchers	1.90 million	0.72 million	0.62 million	0.10 million
Total	5.12 million	2.07 million	1.97 million	0.10 million

Estimating respondents' benefits from using Auto-Switch

Average respondent benefit amongst survey respondents

- A7.28 Having estimated the take-up of Auto-Switch, our next step was to estimate the value switchers would derive from using it.
- A7.29 One method of estimating consumers' value for a product or service is through what is known as a willingness to pay (WTP) approach. This considers that a product is worth what consumers will pay for it. So, if for example, a switcher is willing to pay a maximum price of £5 to use Auto-Switch, then it is worth £5 to them and, since Auto-Switch will be free, this switcher will therefore derive a benefit of £5 when using Auto-Switch. It is therefore possible to obtain an estimate of the benefits consumers will obtain through the implementation of Auto-Switch by aggregating individual consumers' WTP for Auto-Switch.
- A7.30 As explained above, after asking respondents whether they would use Auto-Switch if it was available for free, we asked any respondent who answered "definitely", "probably", or "possibly/possibly not" whether they would use Auto-Switch at a given price. Based on these responses, we determined the maximum price that each respondent was definitely willing to pay, and the maximum price that they were probably willing to pay, and then used these figures to calculate relevant averages for various groups of switchers.²⁷⁵ We also calculated take-up at each price point.

²⁷⁴ The numbers of current C&R switchers who will use Auto-Switch and then keep or change their numbers are derived from the survey responses to question QF3F. Around 86% of C&R switchers who said they would definitely or probably use Auto-Switch said they would also keep their number.

²⁷⁵ Where a respondent only indicated a price they would definitely pay, we use this for the price they would probably pay too. Also, if respondents stated they would definitely (or probably) pay several price points, we took the maximum value they were willing to definitely (or probably) pay.

A7.31 Figure A7.5 below presents the take-up of Auto-Switch at each price, amongst both PAC switchers and C&R switchers. The percentages in the table reflect the proportion of respondents who said they would definitely or probably pay a given price to use Auto-Switch. It shows, for example, that amongst PAC switchers, 25% said they would definitely pay 50p to use Auto-Switch and a further 21% said that they would probably pay 50p to use Auto-Switch.

Figure A7.5: WTP for Auto-Switch: Take-up of Auto-Switch at various price points

Price	PAC switchers			C&R switchers		
	% definitely would	% probably would	% definitely or probably would	% definitely would	% probably would	% definitely or probably would
£10	3%	6%	9%	2%	4%	6%
£5	5%	9%	14%	4%	9%	12%
£2	10%	15%	25%	8%	18%	27%
£1	16%	19%	35%	17%	23%	40%
£0.50	25%	21%	45%	25%	24%	49%
£0	43%	36%	80%	39%	35%	73%

A7.32 Figure A7.6 below presents the average stated WTPs for Auto-Switch, amongst PAC switchers and C&R switchers respectively. Respondents who stated they would “possibly/possibly not”, “probably not” and “definitely not” use Auto-Switch if it was free are assigned a zero WTP value.²⁷⁶

²⁷⁶ We assumed that any respondent who answered “probably wouldn’t” or “definitely wouldn’t” to the usage question would not be willing to pay to use the process, because they were unlikely to use it when it was free. As a result, we did not ask these respondents about their WTP for the process and we instead applied a £0 value to these respondents in our calculations. Respondents who answered “possibly/possibly not” were asked the WTP question, but we have also assigned a value of £0 to them to be conservative.

Figure A7.6: Average maximum stated WTP for Auto-Switch ²⁷⁷

Group	Definitely pay amount	Definitely or Probably pay amount
PAC switchers	59p	£1.52
C&R switchers	52p	£1.41

A7.33 The survey results suggest that, on average, PAC switchers and C&R switchers were probably willing to pay £1.52 and £1.41 respectively to use Auto-Switch. If we restricted the analysis to include only those amounts that respondents were definitely willing to pay the averages fall to 59p for PAC switchers and 52p for C&R switchers.

Adjusted average respondent benefit amongst survey respondents

A7.34 The average willingness to pay figures are based on answers to a series of questions about take up at different price points. As such, the concern we discussed in paragraph A7.15- 22 about exercising caution in using these estimates applies equally here. Again, we think there are reasons why the survey responses might over-state willingness to pay and other reasons why the survey might under-state this and it is unclear which effect dominates.

A7.35 On the one hand, respondents may have over-stated their willingness to pay to use Auto-Switch because the amounts being proposed that they pay to do so were hypothetical: they do not need to pay these amounts. This is another example of hypothetical bias.

A7.36 On the other hand:

- Respondents may have under-stated their willingness to pay for Auto-Switch because they did not think, on principle, that they should have to pay to use a switching process. On this, we note that 10-17% of those who said they would use Auto-Switch if free told us they would not pay anything for it at all because they disagreed on principle that they should have to pay for it.
- Other respondents' valuations may be constrained by what they consider reasonable to pay to switch or what they are used to paying to send a text message, rather than reflecting the true value to them of the process change. This is known in the economic

²⁷⁷ These averages are calculated across all respondents, including those who have zero WTP. The number can be derived from Figure A7.5 by multiplying each price level by the relevant take up number (but excluding the percentage of people who would also take-up Auto-Switch at a higher price). For example, for PAC switchers 59p = £10*2.9% + £5*(5.0%-2.9%) + £2*(9.7%-5.0%) + £1*(15.7%-9.7%) + 50p*(24.9%-15.7%). The "definitely/probably pay" amount is calculated in a similar fashion, but constitutes an amount respondents are willing to pay above the "definitely pay" amount. So, for example, for PAC switchers: £1.52 = 59p + £10*6.2% + £5*(8.8%-6.2%) + £2*(14.9%-8.8%) + £1*(19.4%-14.9%) + 50p*(24.5%-19.4%).

literature as ‘anchoring’. As we use the amounts that switchers were willing to pay to use Auto-Switch in order to derive the consumer benefit from Auto-Switch, such responses mean that our valuation of the benefit is underestimated.

A7.37 Respondents' answers to the Willingness to Pay questions may also have been affected by the fact that the first take-up question they were posed about Auto-Switch asked them to assume it was available for free. This is also an example of ‘anchoring’. Whilst we consider there are reasons that might lead to willingness to pay to be under-stated, we have down-weighted this data to ensure we have corrected for the risk of hypothetical bias. In doing so we have had regard to the academic literature on best practice to address this bias (discussed in paragraph A7.19-21) and the advice of our market research agency (discussed in paragraph A7.22).

A7.38 Survey design constraints also mean that stated WTP understates benefits in two respects:

- Respondents may have been willing to pay more than the price allocated to them but were unable to express this given the survey design. For example, someone who said they would definitely pay £2 and probably pay £5 may have been definitely willing to pay somewhere between £2 and £5. We therefore consider our analysis to be conservative as it allocates them a “definitely pay” value of £2. Respondents who said that they would definitely or probably pay £10 to use Auto-Switch may have been prepared to pay significantly more than £10 but unable to express this as £10 was the maximum price tested under the survey.
- Respondents may have been willing to pay more for the online route than we have estimated as even though over half (55%) of PAC switchers²⁷⁸ who would probably or definitely use Auto-Switch preferred the online route over text, they were only asked to give their valuation of the text route.²⁷⁹ We consider it is not unreasonable to expect the value of a preferred option (i.e. online) to be higher than for a lesser preference (i.e. text). It also means that the incremental value of the online route (over and above the text route) is based solely on the sub-group of PAC switchers who said they wouldn't use the text route, but would use the online route (equivalent to around 2% of all PAC switchers).

A7.39 For the purposes of our impact assessment we have therefore adopted the same down-weights to the WTP valuations as we have done for take-up, again recognising that alternative weightings could also be valid. For our **base case**, for each price point, we take 80% of the respondents who said they would definitely pay that amount plus 20% of the respondents who said they would probably pay that amount. This is analytically equivalent

²⁷⁸ BDRC 2017 slide 53.

²⁷⁹ The survey was designed with reliability and robustness of data front of mind. We were concerned that asking a respondent for their WTP for three separate options (Auto-Switch text route, Auto-Switch online route, and GPL route) would increase the complexity and length of the survey, which could create a risk of fatigue and lead to dropouts. As such, for a given respondent, the survey only explored their willingness to pay for up to two routes, prioritising Auto-Switch text and GPL.

to taking 80% of the average “definitely pay” amount across all switchers, and 20% of the difference between the average “definitely pay” and average “probably pay” amount across all switchers. The adjusted average WTP per switcher is set out in Figure A7.7 below. We believe our base case results reflect a reasonable but conservative view of likely willingness to pay for Auto-Switch.

Figure A7.7: Average adjusted WTP

Group	Definitely pay amount	Probably pay amount	Base case ²⁸⁰ average WTP (80/20)
PAC switchers 3.23 million	59p	£1.52	66p
C&R switchers 1.90 million	52p	£1.41	59p

Methodology used to estimate the aggregate benefit

A7.40 Having down-weighted average WTP across PAC and C&R switchers to account for any risk of hypothetical bias, we can derive the total amount switchers would pay to use Auto-Switch by multiplying the relevant adjusted average WTP by the total number of switchers in that group (Figure A7.8).

²⁸⁰ For example, for PAC switchers the base case estimate is calculated as $80\% * 59p + 20\% * (£1.52 - 59p) = 66p$. Estimates for C&R switchers are calculated in a similar fashion. BDRC 2017 slide 98.

Figure A7.8: Aggregate adjusted WTP benefit.²⁸¹

Group	Base case (80/20)		Unadjusted (100/100)	
	Yearly benefit ²⁸² , £m	10-year NPV, £m	Yearly benefit, £m	10-year NPV, £m
PAC switchers	2.1	18.3	4.9	42.1
C&R switchers	1.1	9.7	2.7	23.0
Total	3.3	28.0	7.6	65.2

Change in methodology compared to May 2017 approach

- A7.41 The approach we described above to estimate total willingness to pay for Auto-Switch amongst switchers is based on a slightly different approach to adjusting for hypothetical bias from that we used in our May 2017 consultation.
- A7.42 In our May 2017 consultation (see Annex 11), we undertook a two-stage approach.
- A7.43 First, in relation to take-up of Auto-Switch, on the advice of our market research company, we applied an 80/20 down-weighting where we assumed that 80% of those who stated that they would definitely take-up Auto-Switch, and 20% of those who stated that they would probably take-up Auto-Switch for free would do so in reality.
- A7.44 Second, for the WTP valuations, we took the user group calculated above, and then considered how much of the WTP amount we should take into account. Due to the risk of hypothetical bias we considered that it would not be appropriate to include the full amount that consumers would ‘probably’ pay. We did not decide on an exact percentage but showed a range for aggregate WTP benefit where the adjusted “definitely pay” amount was the lower bound and the adjusted “probably pay” amount was the upper bound.

²⁸¹ Calculation for PAC switchers, for example, is 3.23 million * 66p = £2.1 million. For C&R: 1.90 million * 59p = £1.1 million.

²⁸² The yearly benefit can be calculated directly from Figure A7.5. The first step would be calculating adjusted take-up for each price point using the 80/20 assumption, so for example for PAC switchers at £10 it would be 3%*80% + 6%*20%=3.5%, at £5 it would be 5%*80% + 9%*20%=5.7% etc. Then for each price point we would calculate an incremental adjusted take-up, so for £10 it would be 3.5%, for £5 it would be 5.7% - 3.5% = 2.2% etc. (This is to prevent double counting of people who said “definitely” or “probably” for several price points). Then we would calculate yearly benefit by multiplying each price point by incremental adjusted take-up at that price point and multiplying that by the total number of switchers. To summarise, total yearly benefit = number of switchers * (£10 * adjusted incremental take-up at £10 + £5 * adjusted incremental take-up at £5 + £2 * adjusted incremental take-up at £2 + £1 * adjusted incremental take-up at £1 + £0.50 * adjusted incremental take-up at £0.50).

- A7.45 If we were to continue to follow this approach, then we would calculate a WTP benefit with a lower bound (based on “definitely pay”) of £16.8 million and an upper bound of £35.7 million (based on probably pay). Following our May 2017 consultation, we have reflected further on our approach and concluded that the approach above led to an inconsistent treatment of the take-up and WTP questions and potentially also led to the double down-weighting of benefits, as first, we reduced take-up by 80/20 and then we applied an additional and distinct adjustment to the amount respondents would be willing to pay. This approach also gave no clear guidance as to how much of the ‘potentially’ pay to take into account resulting in a wide range. We note that our preferred WTP estimate, as set out above, falls just above the middle of this range. We note that our conclusions on proportionality are not affected by this change in approach. If we were to have continued with the May approach, the costs for Auto-Switch would have fallen within the range between our lower and upper bounds, even if we were to assess Auto-Switch on an incremental basis.
- A7.46 We have now refined our approach and consider that it would be better to treat the take-up for free and WTP questions consistently. Under this approach we treat the question which asked respondents whether they would take-up Auto-Switch if it was free as a logical extension of the series of WTP questions which explored take-up at various price points. We then apply down-weights consistently across all price points (including zero price). That is, across all price points (including take-up for free) we include 80% of those who would definitely use Auto-Switch at that price, and 20% of those who would probably use Auto-Switch at that price.
- A7.47 To explain the main difference between our current approach described in previous sections in this Annex and the May 2017 approach we have set out how the two approaches differ in terms of how much weight they put on the four different components of the aggregate WTP benefit.:
- The amount that respondents who would **definitely** use Auto-Switch for free would **definitely** pay (*def-def*);
 - The amount that respondents who would **definitely** use Auto-Switch for free would **probably** pay (*def-prob*);
 - The amount that respondents who would **probably** use Auto-Switch for free would **definitely** pay (*prob-def*);
 - The amount that respondents who would **probably** use Auto-Switch for free would **probably** pay (*prob-prob*);
- A7.48 Figure A7.9 below shows the total sums that can be attributed to the four categories before making any adjustments (in 10yr NPV terms). Whilst the two approaches are consistent in including 80% of the amounts that those who would definitely take-up Auto-Switch for free would definitely pay, they differ in their treatment of other categories

Figure A7.9: Adjustments to aggregate WTP

Stated likelihood of take-up of Auto-Switch for free	WTP based on “definitely pay” amount, £m	WTP based on “probably pay” amount, £m
Definitely would use for free	def-def: May Consultation (80% of £19.7m) Statement (80% of £19.7m)	def-prob: May Consultation (0-80% of £18.1m) Statement (20% of £18.1m)
Probably would use for free	prob-def: May Consultation (20% of £5.2m) Statement (80% of £5.2m)	prob-prob: May Consultation (0-20% of £22.2m) Statement (20% of £22.2m)
Total	£24.9m	£40.2m

A7.49 The approach adopted in May 2017 took 80% of the value in *def-def* and between 0 and 80% of the value in *def-prob* categories plus 20% of the value in *prob-def* and 0 to 20% of the value in *prob-prob* categories.²⁸³

A7.50 In our revised approach we apply a consistent 80/20 approach across all price points, and assume that at each *price* point 80% of those who stated that they would definitely pay would do so, and 20% of those who would probably pay would do so.²⁸⁴

A7.51 The table above highlights that a number of respondents stated they would probably use Auto-Switch if it was free, but when presented with WTP questions, responded that they “definitely would pay” to some price points.²⁸⁵ These responses may be viewed as inconsistent since if a consumer would definitely pay £5 to use Auto-Switch, it is reasonable to expect that they would also definitely use Auto-Switch if it were free.

A7.52 Together with our market research company, we have considered these responses more closely and have decided to include these WTP valuations in our analysis for the purposes of our WTP estimation, since we believe that considering the individual’s responses as a

²⁸³ Under this approach the total WTP benefit was calculated as $80\% \times (19.7) + (\text{between } 0 \text{ and } 80\%) \times (18.1) + 20\% \times (5.2) + (\text{between } 0 \text{ and } 20\%) \times (22.2) = \mathbf{16.8m-£35.7m}$. However, we did emphasise that there was some uncertainty as to how much of the “probably pay” amount was appropriate for us to take into consideration. £35.7 million was the upper bound of our base case, in which all of the “probably pay amount” was included in the calculation, and the lower bound was £16.8 million when we do not take into account any of the “probably pay” amount.

²⁸⁴ The total WTP benefit was calculated as $80\% \times (19.7 + 5.2) + 20\% \times (18.1 + 22.2) = \mathbf{£28.0m}$.

²⁸⁵ All of them said they would definitely pay at least 50p, some said they would pay more.

whole, it is reasonable to believe that they would take-up the process at price zero.²⁸⁶ For the purposes of calculating the adjusted average WTP we have taken into account the amounts they said they would definitely pay i.e. assumed that 80% of that group would take up Auto-Switch at the relevant price points. This is consistent with BDRC's approach to inconsistent answers at positive price points to other WTP questions where a manual adjustment was made based on the pattern of the responses.²⁸⁷

A7.53 Our research company conducted a review of the individual responses of consumers who said "probably" to use at price zero, but then provided "definitely" pay amounts, and concluded that their WTP responses in most cases appeared internally consistent i.e. that these respondents were "definitely" willing to pay something. BDRC therefore consider that a reasonable alternative approach to this analysis would be to allocate these responses to the "definitely would use for free" category, and that the previous approach provided a conservative estimate. If we were to treat this group as definite users, we would slightly increase our adjusted take-up figures. In our base case, adjusted take-up for PAC switchers would increase from 42% to 46%, and for C&R switchers – from 38% to 41%. This would lead to an increase in the number of consumers who would benefit from time-savings or a reduction in double-paying and our total benefits estimate would therefore also increase. However, for the purposes of calculating adjusted take-up of Auto-Switch we have treated such respondents as "probably users", i.e. only assumed 20% of them would take up Auto-Switch. This approach is conservative.

²⁸⁶ Respondents who said they would "possibly/possibly not" use Auto-Switch for free were also asked the WTP questions and some of these respondents said they would be willing to definitely or probably take-up Auto-Switch at a positive price. If we had included these valuations in our analysis, it would have slightly increased our aggregate WTP benefit. We decided to take a conservative approach to these responses and assume the valuation of these respondents is zero.

²⁸⁷ This manual adjustment took account of the context of consumers' responses. So, for example, one consumer who said they'd definitely pay £2, but probably pay 50p or £1 was considered to be inconsistent and given a "probably" WTP response for £2, and therefore a "definitely" WTP value of £0. Conversely, other cases where all responses bar one were consistent, were considered to be overall consistent and the aberrant response was ignored.

A8. Benefits for those not currently switching

- A8.1 In our impact assessment, we have provided a conservative quantification of the impact of our switching reform. This quantification exercise was based on the current numbers of PAC and C&R switchers and our expectation as to how they might benefit from our reforms. In this Annex we discuss the impact of our reforms for those who do not switch under the current switching process i.e. non-switchers.
- A8.2 Within the term non-switchers we include all consumers who did not switch in the last 12 months under the current switching process. This includes two groups: active considerers, i.e. mobile users who under the current switching process considered changing provider and actively started looking for one but decided not to change provider in the last 12 months; and inactive consumers, i.e. mobile users who under the current switching process did not consider changing provider or who considered changing provider but did not start looking for one in the last 12 months. While we have not quantified the impact we expect our reforms could have on the two groups, we describe the overall direction of impacts.
- A8.3 We expect reducing barriers to switching will deliver benefits to both groups of non-switchers, over and above the benefits to current switchers. This is because the reforms might i) lead some consumers, in particular those who actively consider switching, to change their behaviour; and ii) as a result of this, further encourage competition between providers. In the remainder of this annex, we deal first with the impact of our reforms on competition between providers as these changes are likely to impact all consumers (i.e. current switchers and non-switchers), before considering the specific impact on active considerers who may change their behaviour.

Benefits to all consumers due to increased competition between providers

- A8.4 In our assessment of benefits, we concluded that our reforms will reduce barriers to switching by: reducing the time it can take and the unnecessary difficulties that can be involved in switching; eliminating double-paying for those who use Auto-Switch; and providing transparency to consumers. The combination of these reforms will mean that switching costs – both for porters and non-porters – will be reduced.
- A8.5 An indication of the significance of this reduction in switching costs is provided by our 2017 BDRC consumer research. This research found that 60% of the 1.90 million current C&R switchers per year²⁸⁸ (i.e. 1.14m) stated that, under our reformed process, they would both

²⁸⁸ As mentioned in Annex 7, in order to estimate the number of C&R switchers, we used the BDRC 2016 omnibus data. This survey reports that 37% of consumers did not keep their number when switching mobile provider in the 12 months

take up Auto-Switch *and* keep their number whilst switching. If this is taken at face value, then it would indicate that the number of switchers who port their number could increase from 3.23 million current PAC switchers per year²⁸⁹ to 4.37 million and from 63% to 85% of all the current 5.13m switchers per year.²⁹⁰ Under our base case scenario (i.e. assuming that 80% of those who stated that they would definitely take it up would do so, and 20% of those who stated they would probably take it up would do so), we estimate that the number of current C&R switchers who would port their number via Auto-Switch would be 620k.²⁹¹

- A8.6 This change in consumer behaviour is consistent with the Auto-Switch reform reducing switching costs and making it easier for consumers to seamlessly move from one provider to another.²⁹² The economic literature on switching costs suggests that a reduction in switching costs tends to have a downwards impact on prices. As Farrell and Klemperer (2007) noted:

“...markets may indeed perform less well with switching costs than without, so policy intervention to reduce switching costs may be appropriate...”²⁹³

- A8.7 In addition to the impact on switching costs, the reforms may also reduce the ability of firms to price discriminate between consumers. Currently the vast majority of consumers who switch mobile provider need to call the losing provider (whether to give notice or to obtain a PAC code). This call is often used as an opportunity by the losing provider to make a save offer in order to retain the customer. The save offer made by the losing provider can differ from that offered to the rest of its customer base as the price may not be publicly offered to all consumers, just to those who want to leave.
- A8.8 Under Auto-Switch, consumers will be able to switch without speaking to their losing provider. As we explain below, this may mean that some active considerers no longer receive save offers, which will reduce a provider’s ability to price discriminate between

prior to interview (i.e. around 63% switched via PAC). Assuming there are 3.23 million PAC switchers a year (i.e. switchers who keep their number), we estimate that there are around 1.9 million C&R switchers per year.

²⁸⁹ As discussed in Annex 7, data obtained from Syniverse under our formal information powers shows that there were 3.23 million non-bulk PAC switches between October 2015 and September 2016.

²⁹⁰ These are stated responses based on BDRC 2017 slides 74 and 75.

²⁹¹ These switchers are current C&R switchers who would use Auto-Switch in the future and port; some of them also stated they would definitely or probably keep their number “ideally” next time they switched (irrespective of the availability of Auto-Switch). There is some uncertainty regarding whether these respondents would port next time absent Auto-Switch. Many of them had a strong preference for keeping their number last time, but they did not do so. Moreover, the number 620,000 is a conservative estimate, and is already down-weighted compared to stated responses and so we consider it to be a reasonable estimate of the increase in porting under Auto-Switch.

²⁹² The WTP benefits and reduction in double-paying also provide an indication of the benefit from reducing switching costs. However, as stated in Annex 7, WTP benefits may not in practice capture the full benefits of Auto-Switch as consumers’ stated valuations of Auto-Switch may be limited by reference to switching processes normally being free to consumers.

²⁹³ Farrell and Klemperer (2007), “Coordination and Lock-In: Competition with Switching Costs and Network Effects”, *Handbook of Industrial Organization*, Chapter 31, 3, pages 1967-2072.

active and inactive customers. This in turn may impact on how that provider sets prices across all consumers. As Three stated in their response:

“If a provider is unable to determine which of its customers are likely to switch then it will need to advertise as low a price as possible across the entirety of its customer base in order to acquire and retain customers. It is through this mechanism that the entire customer base (including the inactive) benefits from the alertness and propensity to switch of active customers, who are sensitive to price and choose provider based on the price on offer. In this way a particular customer enjoys the benefits of competition regardless of whether they themselves are active or inactive.”²⁹⁴

- A8.9 Whilst the overall impact of a reduction in price discrimination is ambiguous – as some active consumers miss out on save offers and so in theory could face higher prices²⁹⁵, a reduction in price discrimination, combined with a reduction in switching costs, means that our reforms can be expected to result in reduced prices among **inactive** consumers (i.e. mobile users who did not consider changing provider or who considered changing provider but did not start looking for one in the last 12 months²⁹⁶), as well as those active consumers who decide not to switch but do not get a save offer.
- A8.10 We have not sought to quantify the magnitude of any such impact. However, we estimate that there are approximately 39 million inactive consumers per year,²⁹⁷ such that even a marginal reduction in price to such customers could have significant benefits.

Benefits to active considerers

- A8.11 In the remainder of this Annex, we consider the implications of Auto-Switch for **active considerers** i.e. mobile users who under the current switching process considered changing provider and actively started looking for one but decided not to change provider in the last 12 months.
- A8.12 We focus on active considerers because their decision to stay with their provider instead of switching is likely to be affected by a reduction in switching costs. Some of these consumers stay with their provider because the alternative provider’s deal is not attractive enough, potentially due to high perceived switching costs. Others consider switching and accept a better deal from their current provider but their decision to accept or reject a save offer may also depend on expected switching costs. In both cases, as we show in more

²⁹⁴ Three May 2017 consultation response, §1.30.

²⁹⁵ Though as we note below, this effect is limited as switching customers are likely to take advantage of new customer offers which tend to be competitive rates.

²⁹⁶ The BDRC 2015 Quantitative Study referred to “inactive consumers” as “non-switchers/non-considerers”. The results from the study are available here: <https://www.ofcom.org.uk/research-and-data/telecoms-research/mobile-switching>

²⁹⁷ Ofcom Switching Tracker data 2015. For this statement we decided not to update this figure using Switching Tracker 2017 data (which suggests that there are approximately 40 million inactive consumers per year) so we can directly use it in combination with the results from the BDRC 2015 Quantitative Study.

detail below, consumers may benefit from the reduction in switching costs that the Auto-Switch reforms will bring.

A8.13 We have identified the potential impact of our reforms on active considerers (as defined under the BDRC 2015 Quantitative Study) by investigating the reasons why they stay with their provider under the current switching process. Based on this analysis we have distinguished between two different groups of active considerers:

- those who stay with their provider because they accept a save offer; and
- those who stay with their provider for reasons unconnected with a save offer e.g. not knowing what to do to switch.

A8.14 Figure A8.1 below sets out our view as to how active considerers in these two different groups might be affected by the reforms and in doing so, identifies four sub-groups (A – D) of active considerers.

Figure A8.1 Our approach to assessing the potential impact of our reforms on active considerers

Groups based on reasons why active considerers stay with their provider under the current switching process (2015 BDRC Quantitative Study)			
Group 1 Active considerers who currently stay with their provider because they accept a save offer		Group 2 Active considerers who currently stay with their provider for reasons unconnected with a save offer.	
Sub-group according to expected response to the reforms	Potential impact of our reforms	Sub-group according to expected response to the reforms	Potential impact of our reforms
Sub-group A A proportion of Group 1 will continue to get and accept a save offer if – even after our reforms – they continue contacting (or continue being contacted by) their provider.	Potential impact 1 – Neutral These consumers will continue to receive a save offer under Auto-Switch. Whilst it is possible that providers may improve their save offers because a reduction in switching costs would make a customer’s threat of switching more credible and, in turn, would increase rivalry between providers, we have been conservative and treated	Sub-group C We expect a proportion of Group 2 will decide to engage with their provider to switch and end up actually switching or getting a save offer, if our reforms address the barriers that prevented them from switching under the current switching process.	Potential impact 3 – Benefit We expect these active considerers will benefit from our reforms via the gains from switching (net of any switching costs), or, if they obtain and accept a save offer.

	the impact on this group as neutral.		
<p>Sub-group B</p> <p>The remaining proportion of Group 1 will no longer get a save offer if – due to our reforms – they no longer contact (or are no longer contacted by) their provider.</p>	<p>Potential impact 2 – Benefit or Harm</p> <p>Under our reforms, these consumers now switch rather than accept a save offer. This group may be better off taking advantage of a new competitive deal from a different provider. Switching consumers are likely to benefit from special offers for new customers, which tend to be among the most attractive offers in the market. Further, the reduction in switching costs may mean that switching is now better for the consumer than accepting a save offer. However, we cannot rule out that some might be worse-off by our reforms, if the offer that they switch to is worse than the save offer which they would have received, although we would expect such an impact to be modest.</p>	<p>Sub-group D</p> <p>We expect that the remaining proportion of Group 2 will continue to stay with their provider on their current tariff, given our reforms have not addressed the reasons why they opted to stay with their provider under the current switching process.</p>	<p>Potential impact 4 – Benefit</p> <p>The impact on this group will be the same as for other inactive consumers – i.e. a benefit due to the impact of a reduction in switching costs and price discrimination on prices for inactive customers.</p>

A8.15 We have considered the potential size of each of the sub-groups below.

A8.16 Ofcom Switching Tracker 2015 reported that 4% of mobile consumers were classified as ‘actively considered but did not switch’ – this equates to c. 1.9 million mobile consumers.²⁹⁸ Using the results from the BDRC 2015 Quantitative Study, we estimated the proportion of

²⁹⁸ For this statement we decided not to update this figure using Switching Tracker 2017 data (which suggests that there are approximately 2 million active considerers) so we can directly use it in combination with the results from the BDRC 2015 Quantitative Study.

active considerers who stayed with their provider because they accepted a save offer (Group 1 in Figure A8.1) versus the proportion who stayed for any other reason (Group 2 in Figure A8.1) using the responses to question A16A of the study (i.e. “Which, if any, of the following were factors that made you decide to stay with your existing mobile provider?”).²⁹⁹

- A8.17 We categorised 61% of all active considerers as part of Group 1 because they indicated that “I negotiated/accepted a deal with my current provider” was a major or a minor factor in deciding to stay with their provider.³⁰⁰ This amounts to 1.16m consumers a year.
- A8.18 We categorised the remaining 39% of all active considerers as part of Group 2 because they indicated that negotiating/accepting a deal was not a major or minor factor in their decision to stay with their provider, which implies that they stayed with their provider for other reasons. This amounts to c. 740,000 consumers per year.
- A8.19 It is difficult to estimate the proportion of Group 1 that we expect would continue to contact (or be contacted by) the losing provider after the reforms and continue to receive and accept a save offer (Sub-group A). Even under our reforms, many considerers may still contact their existing provider, whether for clarification about the switching process, or to try and obtain a better deal before switching provider. In our base case, using our adjusted take-up data we anticipate that 41% of switchers (42% of existing PAC switchers and 38% of C&R switchers) would take-up Auto-Switch and so could switch without contacting their old provider, implying that 59% would still follow the old process and so may continue to receive and accept a save offer. This would correspond to 638k consumers per year.³⁰¹
- A8.20 Conversely, under our base case, 475k active considerers per year – or ~1% of all mobile consumers – may now use Auto-Switch and so switch when before they would have accepted a save offer (Sub-group B). As we state in Figure A8.1, this group may be better off taking advantage of a new competitive deal from a different provider. Switching consumers are likely to benefit from special offers for new customers, which tend to be among the most attractive offers in the market. Further, the reduction in switching costs may mean that switching is now better for the consumer than accepting a save offer. However, we cannot rule out that some might be worse-off by our reforms, if the offer

²⁹⁹ The results from the BDRC 2015 Quantitative Study are available here: <https://www.ofcom.org.uk/research-and-data/telecoms-research/mobile-switching>. We did not use the results from the 2017 study because it only looked at current switchers.

³⁰⁰ The survey did not contain a direct question “did you accept a save offer?”. Therefore, we assumed that all respondents who mentioned that a save offer was a factor in their decision to stay (whether major or minor), accepted such an offer.

³⁰¹ In our May 2017 consultation, we estimated the size of this group based on their answers to the BDRC Quantitative Study and estimated that this group accounted for 7% of all Active Considerers or 0.1m consumers. In this statement, we have decided to estimate the size of this group by reference to our overall estimates of take-up of Auto-Switch. Our conclusions with regard to non-switchers are not affected by this change.

that they switch to is worse than the save offer which they would have received, although we would expect such an impact to be modest.³⁰²

A8.21 Within Group 2³⁰³, it is possible that some consumers may change their behaviour and decide to engage with their provider to switch and end up actually switching or getting a save offer after our reforms. In our May 2017 Consultation, we estimated the size of this group, based on their main reasons for deciding to stay with their existing mobile provider:

- Out of the 39% of all active considerers in Group 2, we have categorised 3% of all active considerers as part of Sub-group C because they indicated the main factor that made them decide to stay with their losing mobile provider was something that is likely to be addressed by our reforms.³⁰⁴ This amounts to 0.05million active considerers per year (i.e. 3% * 1.9 million active considerers per year);
- We categorised the remaining 36% of all active considerers as part of Sub-group D because they indicated the main factor that made them decide to stay with their provider was something our reforms seem unlikely to address.³⁰⁵ This group amounts to 700k active considerers per year.

A8.22 We consider that this categorisation was conservative as some of the reasons we have categorised as part of sub-group D e.g. “not knowing what to do to switch” and “did not want to change my mobile number,” may also be affected by our reforms.

A8.23 In summary, we consider that our reforms to the switching process will also benefit consumers who do not currently switch. For some consumers, our reforms will mean that they are now better able to switch to take advantage of competing offers that better meet their needs. However, even if consumers do not change their behaviour, they still benefit from the greater price pressure caused by lower switching costs.

³⁰² We expect the impact to be modest as the save offer is being compared to a new customer offer which is likely to already be a competitive rate.

³⁰³ Active considerers who stay with their provider for reasons other than accepting a save offer.

³⁰⁴ The list of factors that we assume are likely to be addressed by our reforms are: “It’s too time consuming to go through the process of switching from one provider to another”; “Difficulty when contacting my current provider”; “I had difficulty getting the code I needed from my current provider (i.e. the PAC)”; and “I was worried I might have to pay two providers at the same time”.

³⁰⁵ The list of factors that, we assume, are unlikely be addressed by our reforms are: “Lack of choice”; “Not knowing what to do to switch”; “Worried service wouldn’t be as good with new provider”; “There wasn’t enough difference in cost to be worth switching”; “I was still in a contract so couldn’t leave/would need to pay to leave”; “Hassle to set up a new online account”; “I was worried I might not be able to use my mobile during the switch”; “Didn’t want to lose the content stored in the cloud service provided by my existing provider (e.g. O2 cloud service NOT iCloud)”; “Didn’t want to lose friends and family or other call discounts”; “Handset is locked to current network and I don’t want a new handset”; “Did not want to change my mobile number”; “Current provider is still the best deal/cheapest”; “Current provider has the best quality of service (e.g. network coverage)”; “Would take too long to research the market”; “Difficulty comparing what other providers were offering”; “Didn’t want to pay the upfront cost of the new handset”; “Prefer to stay with trusted/ known provider”; “Problems/ issues with current provider are not sufficiently bad/ frequent to switch”; “Bad experience switching my mobile provider previously”; “Bad experience switching other services previously”; and “Better handsets available with my current network/ didn’t see any other handsets I liked”.

A9. GPL reform option

Introduction

- A9.1 Our previous consultations on mobile switching reform identified two candidate options for reform of the core switching process: Auto-Switch, and a Gaining Provider Led option (“GPL”) under which the consumer would only need to contact their new provider to effect the switch (and, where wanted, the port of an existing number).
- A9.2 Our May 2017 consultation explained that both options could be expected to be effective in addressing the consumer harms we had identified, but that the GPL option would likely involve significantly higher implementation costs for industry than the Auto-Switch option. We were therefore of the view that Auto-Switch was a more proportionate remedy to address the problems we had identified as it would meet our policy objectives but at a lower cost than GPL. We set out again the summary of benefits and costs for the GPL option at Figure A9.1 below.³⁰⁶

Figure A9.1: Summary of the benefits and costs of GPL, May 2017 consultation

Group	Impact	GPL
Benefits to switchers	<i>Reduction in unnecessary time and difficulties progressing the switch</i>	Removes need to speak to losing provider to port / terminate C&R switchers who want to port number do so Worth between £17 million and £41 million over ten years (NPV, WTP-based estimate)
	<i>Reduction in double-paying by C&R switchers</i>	Reduction of between £8 million and £15 million over ten years (NPV)
	<i>Reduction in loss of service for C&R switchers</i>	Enables coordination of stop and start of old and new services without risk of contract overlap
Benefits to would-be switchers	<i>Gains from switching</i> <i>Improved save offer</i>	Gains from switching for considerers who have been put off switching because of process difficulties our reforms are likely to address Improved save offer for considerers who continue to stay with their provider because of a save offer Gains from switching or improved save offer for inactive consumers who are inactive because of process difficulties our reforms are likely to address

³⁰⁶ May 2017 consultation Figure 16.

Group	Impact	GPL
Competition benefits	<i>Benefits flowing from increased competition between mobile providers</i>	Scope for such benefits could potentially be significant Scale of benefits increases with the extent to which our process reforms make switching easier and faster
Costs to industry	<i>Net Implementation costs</i>	£87 million over ten years (NPC)
<i>Potential costs to switchers</i>	<i>Protection against unwanted ETCS</i>	Better protection than status quo in theory, though survey evidence suggests this difference is unlikely material in reality

A9.3 This annex sets out stakeholder responses to the May 2017 consultation and our conclusion on GPL as an option for reform.

Stakeholder responses

Merits of GPL

A9.4 A number of respondents submitted that, although Auto-Switch was likely to represent the more proportionate reform, GPL represented a better or more proportionate solution in term of meeting Ofcom’s aims to deliver a quick and easy switching process, as follows:

A9.5 SSE had concerns with Ofcom’s rejection of GPL, and suggested that:³⁰⁷

- our rejection of GPL as a reform for mobile switching runs against the grain of switching developments generally, including one of the switching principles outlined by BIS (now BEIS) “*The switching process should be led by the organisation with most interest in making the switching process work effectively – the gaining provider*”;
- Ofcom had not assessed in detail how a ‘losing provider led’ process (for example, Auto-Switch) may fit (or not fit) with the market or future developments. SSE highlighted in particular the question of whether future bundles of communications products including mobile (eg. ‘quad play’ services) can readily accommodate one element in the bundle that switches on a losing provider led basis. SSE highlighted Ofcom’s own research showing that consumer confusion about mobile switching and reluctance to switch are partly due to shortcomings of current mobile switching processes and that this factor is likely to have dampened consumer interest in bundle switches including mobile products; and
- Intermediary companies who facilitate online switching may find it difficult to integrate a PAC-based losing provider led switching process into the portfolio of switchable services they can offer customers.

³⁰⁷ SSE May 2017 consultation response pages 1-3.

- A9.6 TalkTalk acknowledged that Auto-Switch was an improvement on the status quo but said it still favoured GPL as it passes responsibility for the switch on to the party with the most incentive to make it happen smoothly, whereas Auto-Switch retains the involvement of the losing provider. It argued that GPL is more streamlined, involves fewer steps, and removes the need for the consumer to contact the losing provider.³⁰⁸
- A9.7 uSwitch favoured GPL, and argued that this would bring the mobile sector in line with other markets, such as switching providers on the Openreach network or energy. They also highlighted that GPL is already a tried and tested method for switching in other European countries.³⁰⁹
- A9.8 CCP/ACOD said it was disappointed that GPL has not been implemented across all communications services.³¹⁰ CCP/ACOD, along with [S&K]³¹¹ suggested that a consistent approach across all services would be preferable for consumers.
- A9.9 We have considered points raised but we have not been persuaded that we should alter our view concerning the GPL option.
- A9.10 SSE, TalkTalk and uSwitch all submitted that GPL processes have a number of advantages or benefits in principle, or have been tried and tested elsewhere. We do not dispute that a GPL process gives the party with the most incentive for the switch to occur effectively, i.e. the gaining provider, the responsibility for this. However, as we set out in the May consultation, we also believe that Auto-Switch moves the process towards the gaining provider and away from the losing provider, as a result of the text and online routes for requesting a PAC/N-PAC. As we set out in that consultation, we agree that GPL would be effective at addressing the harms we have identified, however, our view is that Auto-Switch would perform as well, or almost as well, as GPL.
- A9.11 In relation to the points made about the benefits of a consistent switching approach across mobile and other communications services, we recognise that switching may be less confusing and/or easier for providers, including intermediary parties, to handle where there is a similar process for switching mobile and other communications services, particularly where these are purchased together as part of a quad play bundle. However, it is not clear that requiring a GPL process for mobile switching would necessarily achieve this as:
- GPL switching is currently only available in respect of landline, broadband and pay TV services delivered on Openreach's platform and is not currently available for switching these services between different platforms.
 - Quad play take-up has been relatively limited to date, although we recognise this may change in the future.

³⁰⁸ TalkTalk May 2017 consultation response §1.2, §2.1 - §2.7, §4.9.

³⁰⁹ uSwitch May 2017 consultation response page 2.

³¹⁰ CCP / ACOD May 2017 consultation response page 2.

³¹¹ [S&K] May 2017 consultation response [S&K].

- The Auto-Switch process for mobile switching could work successfully alongside a GPL process for switching landline, broadband and pay TV services, where available. This is because a PAC/N-PAC requested and obtained by text or online could easily be incorporated as part of the process of signing up to a new contract for other services.

Assessment of the consumer benefits of GPL

- A9.12 Several stakeholders (SSE, Three, uSwitch) criticised our BDRC 2017 research, and argued that it failed to take into account that consumers who had previously switched would be more familiar with Auto-Switch concepts (such as a PAC) rather than consumers who had never switched before. As a result, they argue that this research methodology underestimates the benefits of GPL.³¹²
- A9.13 SSE also said that there was a range of unquantified benefits for GPL processes that Ofcom had not taken into account (such as the removal of the losing provider's control over the process, the simplicity of messaging over how to switch, alignment of the switching processes with fixed line switching, and the alignment of the gaining provider's incentives with the ability of the consumer to switch easily). SSE argued that if these unquantified benefits were taken into account there would be a clear preference for GPL.³¹³
- A9.14 However, O2 argued that we overstated the benefits from GPL, and that these are likely to be outweighed by the costs of introducing such a reform.
- A9.15 We disagree with SSE, Three and uSwitch's assessment of our approach. Neither Auto-Switch online or text routes nor GPL are existing mobile switching processes, and both can be explained with equal ease to survey respondents. If bias exists towards Auto-Switch because of the existing PAC process, the same could also be true for GPL as this process is used for switching in other areas such as broadband. In addition, we compared consumers likely take-up and valuation of our proposed options to the status quo. Those who have never switched have not experienced current switching processes and were unable to compare either Auto-Switch or GPL to the status quo. Those who previously switched via C&R may not have been familiar with the PAC process either.
- A9.16 While we recognise that there may be more familiarity with the PAC process among those who have already switched, we do not believe the gap would be reduced significantly even if we took into account this preference. We consider that this was an appropriate method to estimate potential take up and value derived from a future process that does not exist.
- A9.17 In addition, we consider that many of the unquantified benefits that SSE submitted would be delivered by GPL will also be delivered by Auto-Switch and we discuss these benefits in detail in Annex 2 – Auto-Switch process.

³¹² SSE May 2017 consultation response page 7, Three May 2017 consultation response page 15, uSwitch May 2017 consultation response page 2.

³¹³ SSE May 2017 consultation response page 7.

GPL specification

- A9.18 Our May consultation set out in detail the specification for GPL.³¹⁴ A GPL reform would:
- be open to switchers not wishing to port their number.
 - include mobile switches by business customers (as for all consumers, up to a threshold total of fewer than 25 mobile numbers).
- A9.19 These specifications are the same as for Auto-Switch.
- A9.20 Under the GPL process, a consumer wishing to switch provider (and port their number if wanted) would only need to contact the new (gaining) provider they are switching to. Once the consumer had contacted their new provider, the process would follow the steps below:
- The gaining provider would check with the consumer if they want to switch provider and, if so³¹⁵, whether they want to port their number.
 - Where the consumer wishes to switch (porting or non-porting), the gaining provider would arrange for the Central Porting Service (CPS) to send a verification text to the consumer containing Switching Information (as set out under the Auto-Switch process described in section 4).
 - Where the consumer wishes to proceed, he/she would provide verification³¹⁶ for the switch by replying to this text. The gaining provider would then issue the consumer with a new SIM card and would coordinate the switch, and number port where required, at the point the new SIM card was activated.
- A9.21 The CPS would form the route for contact between the losing and the gaining provider, and the consumer. The CPS would contact the losing provider to check that the consumer is authorised to request a switch, would collate Switching Information from the losing provider, and would despatch a text to the consumer containing this Switching Information.
- A9.22 GPL would also include a ‘backstop’ verification route for consumers who could not receive a ‘verification’ text message from the gaining provider, for example because of lack of mobile reception. In these circumstances the consumer would, as well as contacting their new provider, also contact his/her losing provider by phone. The losing provider would provide verification to the CPS, so enabling the switch to proceed.
- A9.23 [S<] noted that, while GPL offers the consumer a frictionless switching experience, it would need to be augmented with additional features to fully address consumer barriers

³¹⁴ Full details of our proposed GPL process can be found in Section 4 and Annex 7 of our May 2017 consultation.

³¹⁵ And by implication want to cancel their old service with their old provider

³¹⁶ The verification text enables the consumer to confirm that they have received the confirmation text and Switching Information, and that they are content for their new provider to proceed with the switch. It also alerts the consumer that a request to switch has been made, which is an important safeguard should any fraudulent attempt be made to switch.

Annexes 2-11: Consumer Switching

Decision on reforming the switching of mobile communications services

to switching. Consumers would require easy access to key details of their service package before entering any formal switching process.³¹⁷

- A9.24 Three set out its view that the GPL option could be delivered more cost effectively without an enhanced role for the CPS.³¹⁸ It also said it would allow ‘Reactive Save’ by providers which Three argued is harmful to consumers and competition, and that Ofcom should ban such activity.³¹⁹
- A9.25 Virgin said that it supported, as a general principle, GPL processes across all types of switching provided that we amended GC1.2 to allow consumers to compare offers from their current provider alongside the offer from their new provider, at the time of switch.³²⁰⁻³²¹
- A9.26 TalkTalk said that adding the backstop route was unnecessary.³²²
- A9.27 O2 suggested that GPL is likely to drive poor consumer experience due to less informed switching, unauthorised switching and slamming, compared to current switching arrangements.³²³
- A9.28 We have considered the points raised but do not consider that they would have caused us to amend significantly the specifications of a GPL based reform.
- A9.29 We agree that a consumer’s decision to switch can occur during a broader context of a ‘research journey’ which may start considerably earlier than any ‘purchase journey’ (i.e. the decision to switch) and that the consumer should have access to any implications of switching at an early stage, accessible independently of any decision to switch. For this reason, our specification of GPL included that losing providers would need to allow the consumer to request Switching Information by text, via online account or by phone, and provide this information immediately, independently of any decision to switch.³²⁴
- A9.30 We do not agree with Three’s suggestion that the role of the CPS could be removed for the following reasons:

³¹⁷ [§<] May 2017 consultation response, [§<].

³¹⁸ Three May 2017 consultation response, §2.4 to §2.11

³¹⁹ Three May 2017 consultation response, §1.2, §1.6, §1.7 - §1.55, Three May 2017 supplementary response of September 2017, page 22.

³²⁰ Virgin May 2017 consultation response, §2. Note Virgin also said that whilst they support GPL in principle, they believe that for mobile switching it is disproportionate, and instead support our Auto-Switch proposal (page 2).

³²¹ Note “GC1.2” refers to the condition under the former General Condition numbering scheme. Following our review of General Conditions, we have now renumbered this to “A1.3”. See Review of the General Conditions of Entitlement, Revised General Conditions Annex 14, 19 September 2017, available at:

https://www.ofcom.org.uk/data/assets/pdf_file/0023/106394/Annex-14-Revised-clean-conditions.pdf

Condition A1.3 would, under a GPL switching process, prohibit the consumer’s current provider from using any information received during the switching process from the consumer’s new provider. This would mean that the current provider could not, as a result of information received during the switching process, unilaterally contact the consumer to inform him/her about any offers.

³²² TalkTalk May 2017 consultation response, §2.4.

³²³ O2 May 2017 consultation response §29, §152.

³²⁴ May 2017 consultation Figure 8 – Requirements for GPL.

- It would instead require the consumer to be in direct contact with their existing provider, in particular to receive a text directly from them setting out Switching Information. GPL is meant to remove the need for such contact, so this would undermine a key aspect of GPL reform.
- Without the CPS, it is not clear how the gaining provider could identify and contact the relevant losing provider. There would still need to be communications channels between losing providers and gaining providers in order for information to pass between them about any switch.
- the GPL process would require the consumer to confirm their intention to switch to their new provider, as, without the CPS, they could not simply respond to the text containing Switching Information as this would be sent by their losing provider. This would introduce a further step into the switching process which would compromise the consumer switching experience.

A9.31 Regarding Three's point that GPL would allow 'Reactive save', we accept that because consumers need to be provided with Switching Information and verify the switch, this may create a small opportunity for reactive save activity. However, we consider that under GPL this opportunity is small, as it can only occur during the period it takes the consumer to verify the switch which is limited to 24 hours. We consider it likely that in most cases consumers would verify the switch in a shorter timescale than this.

A9.32 Regarding Virgin's point on GC1.2 (renumbered to A1.3), we have set out our position on GC1.2 (A1.3) in our recent Statement and Consultation on GCs.³²⁵

A9.33 We disagree that a 'backstop' route would not be needed under GPL as submitted by TalkTalk. We have sought to introduce reforms that would not result in a worse switching experience for some consumers, compared to their experience under the status quo. Given that current switching arrangements do not rely on access to mobile coverage, any new process will need to ensure, among other things, that any lack of mobile coverage does not become a barrier to switching. The backstop route ensures this.

A9.34 We disagree with O2's suggestion that GPL could result in unauthorised switching and slamming, compared to current switching processes. In our view, GPL would not materially increase the risks of unauthorised switching. There are a number of reasons for this:

- To port the consumer's number, a fraudster would need to be in possession of the SIM card (through burglary, theft etc.) and would need to wait at least a day before the number could be ported. This would give the authorised account holder time to report the SIM (and possibly the handset) as lost or stolen.
- The need for a consumer to verify the switch ensures that the consumer in possession of the SIM card confirms the switch.

³²⁵ Review of the General Conditions of Entitlement, Statement and Consultation, 19 September 2017, available at https://www.ofcom.org.uk/data/assets/pdf_file/0026/106397/Statement-and-Consultation-Review-of-the-General-Conditions-of-Entitlement.pdf. See especially §14.19.

Estimated costs of GPL

- A9.35 Our May 2017 consultation set out our estimates of gross and net implementation costs for our GPL reform option. Gross costs ranged from £78.6 million to £108.7 million (10-year NPC), with net costs ranging from £69.6 million to £103.5 million (10-year NPC).³²⁶
- A9.36 Three and TalkTalk both argued that Ofcom had included unnecessary features in the specification of GPL and overestimated the costs of GPL as a result:
- Three³²⁷ suggested that Ofcom failed to scope a version of GPL which omitted the role, and hence costs, for the CPS. Three remarked that Ofcom had, by contrast, scoped such a CPS-free version for Auto-Switch.
 - TalkTalk³²⁸ suggested that including costs for a ‘backstop route’ is unnecessary, given this ‘backstop route’ for requesting and confirming a switch under GPL is unnecessary.
- A9.37 We note, for the reasons set out above, that we consider it necessary to include the role of the CPS within GPL and retain the backstop route. For these reasons we do not believe that it is warranted to reduce the estimated costs for GPL in respect of these items.
- A9.38 We note that removal of the CPS function under GPL would require communications channels to be put in place between losing providers and gaining providers in order for information to pass between them about any switch. We believe that establishing these communications channels would negate savings from removing the CPS function and could be costlier.
- A9.39 We also note that the costs of GPL, as consulted on in May 2017, are likely to have increased. This is because we have made revisions to the costs of Auto-Switch, and a key element of this revision would also apply to GPL in our view.
- A9.40 This element concerns the cost associated with processing requests to switch by consumers not porting their mobile number, i.e. costs associated with processing N-PACs. Operators will need to undertake a number of back office functions when processing N-PAC requests for switches.
- A9.41 We set out in Annex 3 that taking account of such additional costs has increased our estimated costs for Auto-Switch by around £5 million (10-year NPC).
- A9.42 Although the GPL option contains no requirements for N-PAC, it nevertheless requires similar back office functions to process requests for switches without number porting. We believe our May 2017 estimates of GPL costs omitted these elements, in the same way that they were omitted in our estimates of costs for Auto-Switch, and that these elements require similar costs.

³²⁶ May 2017 consultation, Figure A8.6.

³²⁷ Three May 2017 consultation response, §2.4 - §2.11.

³²⁸ TalkTalk May 2017 consultation response, §2.4.

A9.43 On this basis, our estimate of the overall increase in costs for GPL would have been of a similar order of magnitude to the additional costs we have estimated for Auto-Switch, i.e. around £5 million (10-year NPC).

Conclusion

A9.44 In our view, GPL remains the more onerous reform to achieve our policy objective of reducing the unnecessary time and difficulties involved in progressing a switch.

A10. Modifications to the General Conditions under section 48 of the Act

- A10.1 In order to give effect to our decisions set out in this document, Ofcom has decided to:
- modify two of the existing revised General Conditions;³²⁹ and
 - add new definitions in the revised General Conditions.
- A10.2 This Annex gives an overview of these changes and explains why we consider they are consistent with our statutory powers, duties and other relevant legal tests.
- A10.3 Annex 11 sets out our Notification under section 48(1) of the Act.

Changes to the revised General Conditions

- A10.4 In September 2017, we published a statement and consultation in relation to our review of the General Conditions as a whole.³³⁰ This set out the changes that we had decided to make to the General Conditions, and consulted on some further proposed changes that do not affect the modifications to the General Conditions that we are making in this Statement. One of the aims of the review of the General Conditions was to make them simpler and clearer and some of the changes we have already made, which will come into force on 1 October 2018, involve:
- renumbering all the conditions to reflect a new categorisation into three parts: Part A for “Network functioning conditions”, Part B for “Numbering and other technical conditions” and Part C for “Consumer protection conditions”. E.g. GC 1 has been renumbered as GC A1; and
 - moving away from having separate definitions of “Communications Provider” in each General Condition and using the term “Regulated Provider” instead; and moving all the definitions to the end of the General Conditions and using a single definition across the GCs as a whole, wherever possible.
- A10.5 We have therefore drafted our modifications to the General Conditions in this document in the same style as the revised General Conditions as a whole and, consequently, they should be read alongside the revised General Conditions as published on 19 September 2017.³³¹ In particular:

³²⁹ i.e. as revised in our recent review of the General Conditions, and published in September 2017, here: https://www.ofcom.org.uk/_data/assets/pdf_file/0023/106394/Annex-14-Revised-clean-conditions.pdf

³³⁰ Ofcom, *Review of the General Conditions of Entitlement, Statement and Consultation*, https://www.ofcom.org.uk/_data/assets/pdf_file/0026/106397/Statement-and-Consultation-Review-of-the-General-Conditions-of-Entitlement.pdf

³³¹ Ofcom, *Review of the General Conditions of Entitlement, Revised General Conditions*, https://www.ofcom.org.uk/_data/assets/pdf_file/0023/106394/Annex-14-Revised-clean-conditions.pdf

- we have decided that the new general condition provisions will be inserted in Part C of the General Conditions, as a new part of Condition C7. We have therefore attached the revised Condition C7³³² in Schedule 1 of Annex 11, and we have numbered the new paragraphs of Condition C7 as “Condition C7.1(c) and C7.21 to C7.44”. Changes to the revised Condition C7.1 as published on 19 September 2017 are in red text for ease of reference, the unchanged provisions of Conditions C7.2 to C7.20 are in grey, and the minor changes to the drafting of new provisions at C7.21 to C7.44 that we have made since our May 2017 consultation are marked up;³³³
- we have adopted the approach of specifying which providers would be “Regulated Providers” at the start of the modified general condition (see paragraph C7.1(c));
- our modification of Condition C7 does not contain a full list of defined terms. Instead, we have inserted some new defined terms into the definitions section of the revised General Conditions (and we make use of terms already defined there). New defined terms since our May 2017 consultation are in red text, and the minor changes that we have made to the May 2017 draft are marked up; and
- we are also modifying Condition B3 to remove rules set out there that are superseded by the reforms encapsulated in the modifications to Condition C7 and the new definitions. Changes to Condition B3 as published on 19 September 2017 are in red text, and the minor changes to the drafting that we have made since our May 2017 consultation are marked up.

We consider all the changes achieve our regulatory policy objectives

The modifications to Condition C7

A10.6 Paragraph C7.1(c) explains which of the revised provisions of Condition 7 apply (in respect of mobile switching involving fewer than 25 mobile numbers) to:

- mobile providers from whom mobile domestic and business customers want to switch to a new mobile provider;
- mobile providers from whom mobile customers on residential tariffs want to switch to a new mobile provider;
- mobile providers from whom mobile customers on business tariffs want to switch to a new mobile provider;
- mobile providers to whom mobile domestic and business customers want to switch;
- all mobile providers (whether domestic and business customers are switching away from or to them).

A10.7 Paragraph C7.21 introduces the obligation on mobile providers to provide the code their domestic and business customers need in order to switch, and/or to provide Switching information, on request. Paragraph C7.22 requires:

³³² We have not included Annexes 1 and 2 to the Condition, which are unchanged by our revisions.

³³³ Underlined text denotes additions, crossed through text denotes deletions.

- that the Switching information must be accurate;
- that it must set out the total charge payable by customers and, where relevant, charges for more than one mobile number must be aggregated;
- that it must set out any credit balances, where the switch relates to prepaid mobile services;
- that Switching information that is provided online or by SMS must include a web link to the log-in page for the customer's account online with the mobile provider; and
- that the information must be provided in clear, intelligible and neutral terms.

A10.8 Paragraph C7.23 mandates the minimum three means by which mobile domestic and business customers must be able to request the codes they need to switch, as well as Switching information (which are via SMS, online and by phone), and requires that the codes and/or Switching information be provided free of charge. This paragraph also makes clear that the obligation to ensure customers can request the codes they need to switch, as well as Switching information, via SMS does not apply where the request is for more than one mobile number. For the avoidance of doubt, this would not apply to requests via online or via phone. The effect of Paragraph C7.23 is also to require mobile providers to make available the necessary online facilities where they do not currently do so.

A10.9 Paragraph C7.24 introduces the obligation on mobile providers to ensure there are three unique numbers for requesting, respectively, the PAC, and N-PAC codes needed to switch, and for requesting Switching information, via SMS "as agreed by the relevant industry forum and approved by Ofcom". The process of having industry agree, together with Ofcom approval, already exists in the General Conditions (for example under the regulated process for switching between providers of fixed voice and/or broadband who operate over the Openreach network³³⁴) and we consider it is appropriate to adopt the same approach here. In this respect, we expect:

- mobile providers in the first instance to work together and agree on what the three unique numbers should be;
- mobile providers to then notify us of those numbers;
- that we will then carry out the necessary assessment and, in light of that assessment, provide our approval to enable the numbers to come into effect.

A10.10 We expect the stages set out above to be conducted during, and to be completed before the end of, the implementation period which we have explained commences with publication of this Statement and lasts for 18 months, with the modifications to the General Conditions coming into force on 1 July 2019.

A10.11 Paragraph C7.25 sets out at what times customers must be able to request and receive the codes they need to switch, as well as Switching information, via SMS and online on the one hand, and via phone on the other hand.

³³⁴ See how the use of Cancel Other operates under Annex 1 to Condition C7.

- A10.12 Paragraphs C7.26 to C7.28 apply to customers on residential tariffs. Paragraph C7.26 requires mobile providers to provide the codes and/or Switching information free of charge, not only via the means through which the request was made, but also, where the request was not made by SMS and does not concern multiple mobile numbers, to provide the codes and/or Switching information via SMS.
- A10.13 Paragraph C7.27 requires mobile providers automatically to provide Switching information when they provide the codes to residential customers – i.e. without the customer having to request the Switching information as well.
- A10.14 Paragraph C7.28 requires mobile providers to provide the codes and/or Switching information to residential customers by each of the required routes no later than one minute from receipt of the request, except that where the request is made and the response given by phone, the SMS that must also be sent to the customer containing the code and/or Switching information may be sent either during the call or up to one minute from the end of it.
- A10.15 Paragraphs C7.29 to C7.32 apply to customers on business tariffs. For customers on business tariffs, there are different provisions that apply in relation to requests for a PAC or N-PAC, and in relation to requests for Switching Information.
- A10.16 Paragraph C7.29 requires mobile providers to provide the PAC or N-PAC codes free of charge to business tariff customers in relation to requests that relate to a single mobile number. Where the request is made by phone the code must be provided immediately, or within two hours of the end of the phone call by SMS. Where the request is made by SMS, or online, it must be provided within two working days of the request. When the request is online, the response must be provided both via the account online (for example by email) and by SMS.
- A10.17 Paragraph C7.30 requires that for requests relating to more than one mobile number, mobile providers must give customers on a business tariff free of charge a PAC or N-PAC within two hours of the end of the phone call where the request was made by phone, or where the request was made online, within two working days of the request via the account online (for example by email)
- A10.18 Paragraph C7.31 requires mobile providers to give customers on a business tariff Switching information free of charge at the same time as a PAC or N-PAC, but only where the request for the PAC or N-PAC was made by SMS or via an online account.
- A10.19 Paragraph C7.32 deals with the obligations in respect of requests for Switching information by customers on business tariffs. Switching information must be provided free of charge. It must be provided immediately, or within two hours where the request is made by phone, or within two working days where the request is made by SMS or via an account online, via either SMS or the account online (for example by email). Where the request relates to more than one mobile number, the Switching information must be provided via the account online within two working days.

- A10.20 Paragraph C7.33 ensures that the period of time for which the PAC and N-PAC codes for switching will remain valid will be thirty calendar days.
- A10.21 Paragraph C7.34 ensures that mobile providers are only entitled to reject a request for the codes and/or Switching information in accordance with those circumstances agreed by the relevant industry forum and approved by Ofcom. As mentioned above, the process of having industry agree, together with Ofcom approval, already exists in the General Conditions and we consider it is appropriate to adopt the same approach here. We also note that industry has agreed a list of reasons why a mobile provider may be entitled to reject a porting request³³⁵. We envisage a similar and exhaustive list should apply to a request under the process to switch to a new mobile provider but not to port the mobile number(s). We expect mobile providers to agree on the relevant circumstances, and for us to approve them, over the course of the implementation period.
- A10.22 Paragraph C7.35 requires that where a request is rejected, mobile providers must send confirmation of the rejection immediately via SMS to the switching customer's mobile number.
- A10.23 Paragraph C7.36 (b) implements the part of our package of reforms that prohibits mobile providers from charging their domestic and business customers for any period of notice after the customer has switched to their new mobile provider. Paragraph C7.36 (a) also requires mobile providers to cease providing the service once the customer has switched.
- A10.24 Paragraph C7.37 requires the mobile provider to whom a customer wants to switch to make that customer aware of their ability to provide their code at the same time as entering into their new mobile contract. Together with paragraphs C7.38 (a) and C7.39 (a), these new obligations provide mobile domestic and business customers with the option, and the ability should they so wish, to switch through one contact with their new mobile provider, instead of two contacts under the status quo. Paragraphs C7.38 (b) and C7.39 (b) ensure the current two contact process also remains open to customers.
- A10.25 Paragraphs C7.38 and C7.39 also set out when the one working day time limit, within which the regulated switching processes need to be completed, is counted from. This incorporates the current one working day time limit for mobile number portability contained in General Condition B3.5 (a) (which, as explained further below, we have decided to remove from General Condition B3.5 (a)).
- A10.26 Paragraph C7.40 implements the part of our package of reforms that provides transparency to mobile domestic and business customers. It requires mobile providers to ensure that the minimum three means by which customers can request and receive the codes they need to switch, as well as Switching information (as mandated by paragraph C7.23), are well publicised and readily available, including that the means are easily accessible on their websites. In this respect, paragraph C7.40 mirrors the obligation in the

³³⁵ http://www.mnposg.org.uk/Main_Documents/MNP2%20Manual%20issue%201-32.pdf

new complaints code of practice for customer service and complaints handling which we have imposed as part of the review of the General Conditions.³³⁶

A10.27 Paragraphs C7.41 and C7.42 also implement the part of our package of reforms that provides transparency to mobile domestic and business customers. Mobile providers are required to provide guidance on their websites on the respective regulated processes for switching with or without porting under this general condition. The guidance needs to:

- be concise and easy to understand;
- only contain relevant information about the respective processes.

A10.28 In addition, mobile providers are required to ensure the guidance is well publicised and readily available on their websites.

A10.29 Paragraph C7.43 and C7.44 require mobile providers to provide compensation where there is a delay in the completion of the regulated switching process beyond the one working day limit (as set out in paragraphs C7.38 and C7.39) and to provide guidance to their domestic and business customers on how they can access such compensation and how any such compensation will be paid. These obligations reflect the obligations in the revised General Conditions imposed on mobile providers in the case of porting of mobile numbers³³⁷ (and also extend them to the regulated process for switching mobile provider without porting).

The amendments to Condition B3

A10.30 Condition B3 in the revised General Conditions contains the rules for porting both mobile and landline numbers. We have decided to remove those rules in Condition B3 that are superseded by the package of reforms set out in this Statement. These reforms are primarily concerned with consumer protection in relation to mobile switching (whether or not numbers are also ported), and therefore we consider it appropriate to include them all in Condition C7. To this effect, we have decided to remove:

- paragraph B3.4;
- paragraph B3.5(a).

A10.31 We have decided instead to have a single paragraph B3.5 (to be renumbered B3.4) with clarificatory wording to make clear it does not apply to mobile number porting. Existing paragraph B3.6 (to be renumbered B3.5) sets out when the provider to whom the customer is switching must request porting from the provider from whom the customer is switching. It states that the paragraph is subject to paragraph B3.5 (a) which, as mentioned, we are proposing to remove. We are therefore removing this reference.

A10.32 We have also decided to ensure that we avoid unnecessary duplication between Condition B3 in the revised General Conditions and the modifications to Condition 7 set out in this

³³⁶ See paragraph 18.a. of the Annex to Condition C4 Complaints handling and dispute resolution.

³³⁷ See paragraphs B3.11 and B3.12.

Statement. To this effect, we have decided to amend paragraph B3.11 in the revised General Conditions (which will be renumbered B3.10) to make clear that the obligations in respect of compensation in Condition B3.11 (renumbered B3.10) do not apply where the number is a mobile number. Instead, obligations in respect of compensation for switching of mobile numbers (whether in a porting or a non-porting scenario) are contained in the modifications to Condition 7 (as explained above).

A10.33 For the avoidance of doubt, paragraphs B3.1 to B3.3 and paragraphs B3.6 to B3.10 (to be renumbered B3.5 to B3.9) in the revised General Conditions continue to apply to mobile providers when mobile domestic and business customers want to port their mobile number.

Definitions

A10.34 We have decided to insert the following new definitions which will be used in the modified Condition C7 into the definitions section of the revised General Conditions: Business Mobile Tariff; Mobile Switching; Mobile Switching Customer; Non-Porting Switching Process; N-PAC; Porting Process; Residential Mobile Tariff; SIM Activation; and Switching Information.

Test for setting general conditions

A10.35 As set out in Section 2, the test in section 47(2) of the Act must be met before we can modify existing or set new general conditions.

A10.36 We consider that the modifications to Condition C7 together with the new definitions, are:

- **objectively justified** in that, for the reasons set out in sections 3 to 5 of this Statement, they seek to address the harms that we consider consumers are currently experiencing in respect of the current processes for switching between mobile providers. In particular, the modifications and definitions:
 - reduce unnecessary time and difficulties involved in progressing a switch, in particular, by removing the need for the consumer to speak to the losing provider before switching;
 - reduce the risk of ‘double paying’ by prohibiting consumers from being charged in respect of notice periods after a switch has been effected; and
 - should go towards protecting against the loss of service that can arise when switching by providing a regulated switching process for non-porting switchers.
- **not unduly discriminatory** in that, for the reasons set out in sections 3 to 5 of this Statement, they apply to all mobile providers where their customers are looking to switch, subject to the limitations on the number of mobile numbers involved in the switch;
- **proportionate** in that, for the reasons set out in sections 3 to 5 of this Statement, we consider they effectively meet our regulatory objectives in the least onerous way, and

they do not give rise to adverse effects which are disproportionate to the objectives being met;

- **transparent** in that the modified Condition C7 and new definitions are set out in full in Annex 11 and explained in this document. The modified Condition C7 and associated definitions will also increase transparency by requiring mobile providers to provide guidance on the new switching processes on their websites.

A10.37 We also consider, for the same reasons set out above, that the modifications to Condition B3 are objectively justified, not unduly discriminatory, proportionate, and transparent.

A11. Notification of modifications to the General Conditions under section 48(1)(a) of the Act

Decision to modify the General Conditions

1. Ofcom has decided:
 - a. to modify two of the existing General Conditions of Entitlement;
 - b. to add new definitions to those set out in the Definitions section of the General Conditions of Entitlement.
2. The modifications to Condition C7 of the General Conditions of Entitlement are set out in Schedule 1 to this Notification. The modifications to Condition B3 of the General Conditions of Entitlement are set out in Schedule 2 to this Notification. The new definitions to be added to those set out in the Definitions section of the General Conditions of Entitlement are set out in Schedule 3 to this Notification.
3. Ofcom's reasons for making this decision, and the effect of this Notification, are set out in the accompanying Statement.
4. Ofcom considers that its decision complies with the requirements of sections 45 to 49C of the Act, insofar as they are applicable.
5. Ofcom considers that the modifications and new definitions set out in the Schedules to this Notification are not of EU significance pursuant to section 150A(2) of the Act.
6. In making this decision, Ofcom has considered and acted in accordance with its general duties under section 3 of the Act and the six Community requirements set out in section 4 of the Act.
7. The modifications and new definitions shall enter into force on 1 July 2019.
8. A copy of this Notification is being sent to the Secretary of State in accordance with section 48C(1) of the Act.
9. In this Notification:
 - a. "**Act**" means the Communications Act 2003;

- b. **“General Conditions of Entitlement”** and **“General Conditions”** means the general conditions set under section 45 of the Act on 22 July 2003, as amended or replaced from time to time;³³⁸
 - c. **“Ofcom”** means the Office of Communications.
10. Words or expressions shall have the meaning assigned to them in this Notification, and otherwise any word or expression shall have the same meaning as it has in the Act.
11. For the purposes of interpreting this Notification: (i) headings and titles shall be disregarded; and (ii) the Interpretation Act 1978 shall apply as if this Notification were an Act of Parliament.
12. The Schedules to this Notification shall form part of this Notification.

Signed by



Selina Chadha

Director of Consumer Policy

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

19 December 2017

³³⁸ On 19 September 2017, Ofcom issued a statement, including a notification under section 48(1) of the Act, revoking the existing General Conditions and replacing them with revised General Conditions which will come into force on 1 October 2018 (Ofcom, Statement and consultation: Review of the General Conditions of Entitlement, 19 September 2017, available at: <https://www.ofcom.org.uk/consultations-and-statements/category-1/review-general-conditions>). The modifications and new definitions set out in the Schedules to this Notification have been drafted on the basis that the new General Conditions published on 19 September 2017 and the definitions set out in them are in force.

Schedule 1

C7 Switching

This condition aims to protect domestic and small business customers during the process of switching their landline, and/or broadband services, either when moving from one communications provider to another, or staying with the same communications provider when moving location, or changing services with the same communications provider. It also aims to protect domestic and small business customers when switching mobile provider, whether or not they bring their mobile number with them when they switch.

Scope

C7.1 The provisions of this **Condition** apply as follows:

- (a) **Conditions** C7.3 – C7.15 apply to any **Communications Provider** which provides **Fixed-line Telecommunications Services** and/or **Broadband Services** to **Switching Customers** when a **Communications Provider Migration** is taking place within **Openreach’s** or **KCOM’s Access Network**; **and**
- (b) **Conditions** C7.16 – C7.20 apply to any **Communications Provider** which provides **Fixed-line Telecommunications Services** and/or **Broadband Services** to **Switching Customers** when a **Migration** is taking place within **Openreach’s** or **KCOM’s Access Network**;
- (c) **Conditions** C7.21 to C7.44 apply to the following persons in respect of any **Mobile Switching** involving fewer than 25 **Mobile Numbers**:
 - (i) **Conditions** C7.21 to C7.25 and **Conditions** C7.33 to C7.36 apply to any **Communications Provider** which provides a **Mobile Communications Service**, from whom a **Mobile Switching Customer** is, or is considering, transferring;
 - (ii) **Conditions** C7.26 to C7.28 apply to any **Communications Provider** which provides a **Mobile Communications Service**, from whom a **Mobile Switching Customer** on a **Residential Mobile Tariff** is, or is considering, transferring;
 - (iii) **Conditions** C7.29 to C7.32 apply to any **Communications Provider** which provides a **Mobile Communications Service**, from whom a **Mobile Switching Customer** on a **Business Mobile Tariff** is, or is considering, transferring;
 - (iii) **Condition** C7.37 applies to any **Communications Provider** which provides a **Mobile Communications Service**, to whom a **Mobile Switching Customer** is, or is considering, transferring; and

- (iii) **Conditions C7.38 to C7.44** apply to any **Communications Provider** which provides a **Mobile Communications Service**.

Each person to whom a provision applies is a '**Regulated Provider**' for the purposes of that provision.

C7.2 For the purposes of ~~this~~ **Conditions C7.3 to C7.20**:

any **Fixed-line Telecommunications Services** and/or **Broadband Services** referred to in **Conditions C7.1(a) and (b)** are '**Relevant Communications Services**'

Fixed-line switching

Obligations to prevent mis-selling

- C7.3 When selling or marketing **Relevant Communications Services**, the **Regulated Provider** that is the **Gaining Provider** must ensure that:
- (a) it does not engage in **Slamming**;
 - (b) any information it provides to the **Switching Customer** is accurate and not misleading, including information about:
 - (i) its **Relevant Communications Services**;
 - (ii) the impact on other **Relevant Communications Services** which the **Switching Customer** is currently receiving, as a result of buying the **Relevant Communications Services** being sold or marketed by the **Gaining Provider**; and
 - (iii) the impact on the **Switching Customer's** existing contractual obligations with other **Regulated Providers**, as a result of buying the **Relevant Communications Services** being sold or marketed by the **Gaining Provider**; and
 - (c) it asks **Switching Customers** if they also want the information provided in a **Durable Medium** and, if they do, the **Regulated Provider** must provide the information in that form.

Information at point of sale

- C7.4 The **Regulated Provider** that is the **Gaining Provider** must take all reasonable steps to ensure that before entering into a contract for the provision of **Relevant Communications Services**, the **Switching Customer** who is requesting a **Communications Provider Migration**:
- (a) is authorised to do so;
 - (b) intends to enter into the contract; and

Annexes 2-11: Consumer Switching

Decision on reforming the switching of mobile communications services

- (c) is provided with the information set out below in a clear, comprehensible, prominent and accurate manner, in paper or another **Durable Medium** which is available or accessible to the **Switching Customer** or, where the **Switching Customer** enters into the contract during a sales call, by telephone:
- (i) the identity of the legal entity the **Switching Customer** is contracting with and its telephone, website and/or e-mail contact details; and
 - (ii) a description of the **Relevant Communications Services** requested; the key charges; payment terms; the existence of any termination right, termination procedures and the **Switching Customer's** right to cancel at no cost from the point of sale to the completion of the **Transfer Period**; the arrangements for provision of the service, including the order process and, as accurately as possible, the likely date of provision of the service and any **Fixed Commitment Period**. For the purposes of this provision, key charges include minimum contract charges, any **Early Termination Charges** and, if the **Switching Customer** is a **Consumer**, the **Access Charge** to be applied by the **Regulated Provider** for the purpose of calculating the amounts payable by that **Switching Customer** for calls to **Unbundled Tariff Numbers** in accordance with **Condition B1**.

Switching customer's termination rights

C7.5 Where the **Regulated Provider** is the **Gaining Provider**:

- (a) when the **Switching Customer** enters into a contract for the provision of **Relevant Communications Services**, the **Regulated Provider** must allow the **Switching Customer** to terminate the contract from the point of sale to the completion of the **Transfer Period** without charge or any other form of compensation being required to be given by the **Switching Customer** to the **Regulated Provider**; and
- (b) the **Regulated Provider** must have procedures in place to enable the **Switching Customer** to exercise their right to terminate their contract pursuant to **Condition C7.5** without unreasonable effort. These procedures must include the ability to contact the **Regulated Provider** to terminate the contract by any of the following contact methods:
 - (i) telephone;
 - (ii) e-mail;
 - (iii) post.

Records retention

C7.6 Without prejudice to **Condition C7.7**, the **Regulated Provider** that is the **Gaining Provider** must use reasonable endeavours to create and keep all records regarding the sale of its **Relevant Communications Services**, for a period of not less than six months. Such records must include the date and approximate time of the contact with the **Switching Customer**, the means through which the contract was entered into, the place where the contract was

entered into, where relevant, and be such as to allow subsequent identification of the salesperson(s) involved and to assist in dealing with any complaint or query.

Record of consent

- C7.7 For each contract entered into with a **Switching Customer** for the provision of **Relevant Communications Services**, the **Regulated Provider** that is the **Gaining Provider** must create and keep individually retrievable records of the following, for a period of not less than twelve months:
- (a) a direct record of consent, as provided by the **Switching Customer**, to:
 - (i) migrate from the **Relevant Communications Services** supplied by the **Regulated Provider** that is the **Losing Provider** to the **Relevant Communications Services** supplied by the **Gaining Provider**; or, as relevant,
 - (ii) begin acquiring **Relevant Communications Services** over the **Target Line**;
 - (b) a record of the explanation from the **Regulated Provider** that they are required to create a record of the **Switching Customer's** consent;
 - (c) the name and address of the **Switching Customer**;
 - (d) the time, date and means by which the consent in sub-section (a) above was given;
 - (e) where appropriate, the place where the consent in sub-section (a) above was given and the salesperson(s) involved;
 - (f) the **Target Address**; and
 - (g) where appropriate, the **Calling Line Identification** of the **Target Line**.
- C7.8 The **Regulated Provider** that is the **Gaining Provider** shall keep the records in accordance with **Condition C7.7** irrespective of whether the contract for the provision of the **Relevant Communications Services** is cancelled or terminated within the minimum twelve-month period specified in **Condition C7.7**.

Notification letters

- C7.9 When a **Switching Customer** enters into a contract for the provision of **Relevant Communications Services**, the **Regulated Provider** that is the **Gaining Provider** must send that **Switching Customer** a letter. The letter shall set out in clear and intelligible terms:
- (a) the date of the letter;
 - (b) that the **Switching Customer** is transferring their **Relevant Communications Services**;
 - (c) all **Relevant Communications Services** that will be transferred;

Annexes 2-11: Consumer Switching

Decision on reforming the switching of mobile communications services

- (d) where relevant, the **Calling Line Identification** of all **Relevant Communications Services** that will be transferred;
- (e) a reasonable estimate of the **Migration Date**;
- (f) the right of the **Switching Customer** to terminate the contract as set out in **Condition C7.5**, the means by which the right to terminate can be exercised and the date by which the right to terminate must be exercised; and
- (g) relevant contact details.

C7.10 The **Regulated Provider** that is the **Losing Provider** must, in accordance with the industry agreed process, send the **Switching Customer** a letter. The letter shall set out in clear, intelligible and neutral terms:

- (a) the date of the letter;
- (b) that the **Switching Customer** is transferring their **Relevant Communications Services**;
- (c) all **Relevant Communications Services** that will be transferred;
- (d) where relevant, the **Calling Line Identification** of all **Relevant Communications Services** that will be transferred;
- (e) all **Relevant Communications Services** or other types of services provided by the **Losing Provider** that the **Losing Provider** reasonably expects to be directly or indirectly affected by the transfer;
- (f) all **Relevant Communications Services** provided by the **Losing Provider** that the **Losing Provider** reasonably expects to remain unaffected by the transfer;
- (g) a reasonable estimate of the **Migration Date**; and
- (h) relevant contact details.

C7.11 Where a contract is entered into with a **Switching Customer** for the provision of **Relevant Communications Services**, the letter sent by the **Regulated Provider** that is the **Losing Provider** in accordance with **Condition C7.10** shall, in addition to the information listed therein, set out in clear, intelligible and neutral terms:

- (a) an explanation that the transfer will automatically take effect on the **Migration Date** and that no contact is required with the **Regulated Provider** that is the **Losing Provider** to cancel their existing service;
- (b) an explanation that after the transfer, the **Switching Customer** will receive a final **Bill** including any **Early Termination Charge** that is due;
- (c) an explanation of the applicable **Early Termination Charge** as set out in the contract;
- (d) the means by which the **Early Termination Charge** must be paid;

- (e) the amount of the **Early Termination Charge** due at the estimated **Migration Date**; and
- (f) where applicable, the impact of the transfer on the prices of all continuing **Relevant Communications Services**.

C7.12 The letters under **Conditions** C7.9 to C7.11 must be sent in paper or another **Durable Medium**. Such letters must be sent by normal post, unless the **Switching Customer** has explicitly agreed to receive correspondence electronically, such as through verbal consent in a call or through electronic confirmation when ordering online.

Simultaneous transfers

C7.13 Where the **Regulated Provider** is a **Gaining Provider** which elects to co-ordinate a **Communications Provider Migration** on behalf of a **Switching Customer** who has requested a transfer of **Broadband** and **Fixed-line Telecommunications Services** to be provided by it over the same line, it shall ensure that, as applicable, an order is submitted to **Openreach** or to **KCOM**, where available, for the simultaneous transfer with minimal loss of service of both **Relevant Communications Services**.

C7.14 Where the **Regulated Provider** is a **Gaining Provider** which elects to co-ordinate a **Communications Provider Migration**, on behalf of a **Switching Customer**, and which does not involve a change of the location where the **Relevant Communications Services** are supplied:

- (a) both the **Gaining Provider** and the **Regulated Provider** that is the **Losing Provider** shall comply with the provisions of Annex 1 to this **Condition**;
- (b) both the **Gaining Provider** and the **Regulated Provider** that is the **Losing Provider** shall ensure that the **Switching Customer** is not required to make contact with the **Losing Provider** in order for a **Communications Provider Migration** to be put into effect;
- (c) the **Regulated Provider** that is the **Losing Provider** shall not require, in particular, the granting of consent by it, nor the provision of any information by it to the **Switching Customer**, in order for a **Communications Provider Migration** to be put into effect.

C7.15 Where the **Regulated Provider** is a **Gaining Provider** which elects to carry out a **Working Line Takeover** within **Openreach's** or **KCOM's Access Network** (as applicable) pursuant to a **Home-Move Request**, it shall comply with the provisions of Annex 2 to this **Condition**.

Other migrations of broadband services

C7.16 In relation to **Migrations of Broadband Services** not falling within the scope of **Condition** C7.14, **Regulated Providers** shall:

- (a) facilitate the **Migration** (or where applicable, connection) of the **Broadband Service** in a manner that is fair and reasonable;

Annexes 2-11: Consumer Switching

Decision on reforming the switching of mobile communications services

- (b) ensure that the **Migration** (or where applicable, connection) of the **Broadband Service** is carried out within a reasonable period; and
- (c) ensure that the **Migration** (or where applicable, connection) of the **Broadband Service** is carried out with minimal loss of the **Broadband Service**.

General requirements

Responsibility

C7.17 Where **Regulated Providers** engage representatives or agents, they shall procure that such representatives or agents comply with the requirements of this **Condition**.

Training

C7.18 **Regulated Providers** must ensure that their staff or any representatives of any agency engaged by them, are appropriately trained to comply with this **Condition**.

Monitoring

C7.19 **Regulated Providers** must monitor, including conducting regular audits, their compliance with this **Condition**, including compliance on their behalf by any representatives or agency engaged by them, and take appropriate steps to prevent the recurrence of any problem(s) identified.

Publication of information

C7.20 **Regulated Providers** must:

- (a) publish a copy of **Condition C7**, or a link to a copy of **Condition C7**, published on **Ofcom's** website, in an easily accessible and reasonably prominent manner on their website or, where there is no such website, in such manner and form as directed by **Ofcom**; and
- (b) provide a copy of **Condition C7** to the **Switching Customer** free of charge upon reasonable request.

Mobile switching

Providing the PAC or the N-PAC, and Switching Information on request

C7.21 **Regulated Providers** must provide a **PAC** or an **N-PAC** and/or (as applicable) **Switching Information** to their **Mobile Switching Customers** on request.

C7.22 **Regulated Providers** must ensure that the **Switching Information** provided in accordance with **Condition C7.21** complies with the following requirements:

- (a) it must be accurate as at the day on which it is sent by the **Regulated Provider**;

- (b) it must set out the total charge payable by the **Mobile Switching Customer**, and where the request is for more than one **Mobile Number**, any charges payable must be aggregated across all **Mobile Numbers** for which the request was made;
- (c) it must set out any outstanding credit balances in respect of **Prepaid Mobile Services**;
- (c) when the **Switching Information** is provided online or by **SMS** it must contain a web link to the log-in page for the **Mobile Switching Customer's** account with the **Regulated Provider**;
- (d) it must be provided in clear, intelligible and neutral terms.

How the PAC, N-PAC or Switching Information can be requested and received

C7.23 **Regulated Providers** must ensure their **Mobile Switching Customers** can request free of charge, a **PAC**, or an **N-PAC** and/or (as applicable) **Switching Information** via, at least, the following three means:

- (a) **SMS**, but only where the request for a **PAC** or **N-PAC** is in respect of no more than one **Mobile Number**;
- (b) online, via an account which must be provided by the **Regulated Provider** to its **Subscribers**; and
- (c) by phone.

C7.24 In respect of the obligation under **Condition C7.23(a)**, **Regulated Providers** must ensure that all their **Mobile Switching Customers** can request a **PAC**, or an **N-PAC** and/or (as applicable) **Switching Information** by using the respective unique numbers for each type of request as agreed by the relevant industry forum and approved ~~in writing~~ by **Ofcom**.

When the PAC, N-PAC or Switching Information can be requested

C7.25 **Regulated Providers** must ensure that **Mobile Switching Customers** are able to request a **PAC**, an **N-PAC**, and/or (as applicable) **Switching Information**:

- (a) by **SMS** and/or online in accordance with **Condition C7.23(a)** and (b) at all times; or
- (b) by phone in accordance with **Condition C7.23(c)** during at least any **Working Day**.

How and when the PAC, N-PAC and/or Switching Information must be provided to residential tariff customers

C7.26 **Regulated Providers** must ensure that they always provide, free of charge, the **PAC**, **N-PAC** and/or **Switching Information** (as applicable) to a **Mobile Switching Customer** who has requested it:

- (a) via the same means through which the request was made; and

- (b) if the request was not made by **SMS** and does not relate to more than one **Mobile Number**, in addition via **SMS**.

C7.27 When **Regulated Providers** provide a **PAC** or **N-PAC**, to a **Mobile Switching Customer** they must at the same time also provide **Switching Information**.

C7.28 **Regulated Providers** must ensure that when they provide the **PAC** or **N-PAC** and/or (as applicable) the **Switching Information** in accordance with **Condition C7.26 (a) and (b)** to the a **Mobile Switching Customer**, they do so no later than one minute from receipt of the request, save that, in the case of a request made by phone, the **SMS** required under **Condition C7.26(b)** may be sent at the latest up to one minute from the end of the phone call.

How and when the PAC, N-PAC, and/or Switching Information must be provided to business tariff customers

C7.29 **Regulated Providers** must ensure that they always provide, free of charge, a **PAC** or **N-PAC**, to a **Mobile Switching Customer** who has requested it in relation to a single mobile number:

- (a) where the request was made by phone, immediately over the phone, or if this is not possible by **SMS** within two hours from the end of the phone call;
- (b) where the request was made by **SMS**, by **SMS** within no more than two **Working Days** from the request;
- (c) where the request was made online, via the account online and in addition via **SMS** within no more than two **Working Days** from the request.

C7.30 **Regulated Providers** must ensure that they always provide, free of charge, a **PAC** or **N-PAC**, to a **Mobile Switching Customer** whose request relates to more than one mobile number:

- (a) where the request was made by phone, over the phone within two hours from the end of the phone call; or
- (b) where the request was made online, via the account online within no more than two **Working Days** from the request.

C7.31 When **Regulated Providers** provide a **PAC** or **N-PAC**, in response to a request made by **SMS** or online from a **Mobile Switching Customer** they must at the same time also provide **Switching Information**.

C7.32 **Regulated Providers** must ensure that they always provide, free of charge, **Switching Information** to a **Mobile Switching Customer** who has requested it (whether the request is made by phone, **SMS** or online) by **SMS** (unless the request relates to more than one mobile number), or via the account online, within no more than two **Working Days** from the request.

Duration of validity of PAC and N-PAC

C7.33 A **PAC** and an **N-PAC** shall be valid from the day it is provided for a period of thirty calendar days~~the period of time agreed by the relevant industry forum and approved in writing by Ofcom.~~

Obligation to ensure Regulated Providers provide information where request for PAC or N-PAC or Switching Information is rejected

C7.34 Where a **Regulated Provider** receives a request for a **PAC**, an **N-PAC** and/or (as applicable) **Switching Information** in respect of ~~no more than 24 Mobile Numbers~~, the **Regulated Provider** is only entitled to reject the request in accordance with the circumstances as agreed by the relevant industry forum and approved in writing by **Ofcom**.

C7.35 Where the **Regulated Provider** rejects a request, it must immediately send confirmation of the rejection via **SMS** to the **Mobile Number** of the **Mobile Switching Customer**~~from which the request was received.~~

Obligation to ensure Mobile Switching Customers are not charged for Mobile Communications Service after the switching process has been completed

C7.36 ~~On~~After the **Working Day** on which the **Porting Process** or the **Non-Porting Switching Process** has been completed, any **Regulated Provider** must, after that process has been completed:

- (a) cease providing the **Mobile Communications Services** it was providing to the relevant **Mobile Switching Customer** before the relevant **Mobile Switching Customer** switched using the **Porting Process** or the **Non-Porting Switching Process**; and
- (b) ensure that any charges which the relevant **Mobile Switching Customer** may be required to pay, other than any Early Termination Charge, are charges incurred only as a result of the provision of the **Mobile Communications Services** up to and including the **Working Day** referred to in this paragraph, and do not include any charges in respect of any part of any period of notice that the relevant **Mobile Switching Customer** is required to provide in order to exit the contract with the **Regulated Provider**, that would otherwise extend beyond the **Working Day** referred to in this paragraph.

Submission of PAC or N-PAC at point of sale

C7.37 Before entering into a contract for a **Mobile Communications Service** with a **Mobile Switching Customer**, a **Regulated Provider** must ensure that the relevant Mobile Switching Customer is provided with the option of submitting the **PAC** or **N-PAC** that they have received or will receive from their current provider of Mobile Communications Service at the same time that they enter into the contract.

Obligation to ensure switching process is completed within one Working Day ~~the shortest time~~

C7.38 ~~Regulated Providers and Communications Providers to whom the Relevant Subscriber wants to switch~~ must ensure that the **Porting Process** shall, unless the relevant Mobile

Switching Customer agrees to defer the process, be completed within one **Working Day** from either:

- (a) **SIM Activation**, where the relevant **Mobile Switching Customer** has already submitted the **PAC** to the **Communications Provider** to whom the relevant **Mobile Switching Customer** wants to switch at the time when they entered into the contract; or
- (b) where **SIM Activation** has already taken place, submission of the **PAC** to the **Communications Provider** to whom the relevant **Mobile Switching Customer** wants to switch.

C7.39 ~~Regulated Providers and Communications Providers~~ to whom the ~~Relevant Subscriber~~ wants to switch must ensure that the **Non-Porting Switching Process** shall, unless the relevant **Mobile Switching Customer** agrees to defer the process, be completed within one **Working Day** from either:

- (a) **SIM Activation**, where the relevant **Mobile Switching Customer** has already submitted the **N-PAC** to the **Communications Provider** to whom the relevant **Mobile Switching Customer** wants to switch at the time when they entered into the contract; or
- (b) where **SIM Activation** has already taken place, submission of the **N-PAC** to the **Communications Provider** to whom the relevant **Mobile Switching Customer** wants to switch.

Obligation to advertise means by which PAC or N-PAC or Switching Information can be requested

C7.40 All ~~Regulated Communications Providers~~ which provide ~~Mobile Communications Services~~ to ~~Subscribers~~ must ensure that the three means by which a **Mobile Switching Customer** must be able to request and receive a **PAC** or **N-PAC** and/or (as applicable) **Switching Information**, as set out in **Condition C7.23**, are well publicised and readily available, including ensuring that they are all easily accessible on **Regulated Providers'** websites, with either:

- (a) a weblink being clearly visible on a **Regulated Provider's** primary webpage for all ~~Relevant Subscribers~~ (i.e. '1 click' access); or
- (b) a weblink being clearly visible on a webpage that is directly accessible from a primary webpage for all ~~Relevant Subscribers~~ (i.e. '2 click' access).

Obligation to provide guidance on the switching process

C7.41 All ~~Regulated Communications Providers~~ which provide ~~Mobile Communications Services~~ to ~~Subscribers~~ must provide guidance for ~~Relevant Subscribers~~ on the **Porting Process** and **Non-Porting Switching Process** that is:

- (a) concise and easy to understand; and

- (b) only contains relevant information about the **Porting Process** and **Non-Porting Switching Process**.

C7.42 All such ~~Regulated Communications Providers~~ must ensure that ~~the such guidance to be provided in accordance with Condition C7.41~~ is well publicised and readily available on their websites.

Obligation to provide compensation

C7.43 Where a **Regulated Provider**, ~~or Communications Providers~~ to whom the **Relevant Subscriber** wants to switch, delays the completion of the **Porting Process** or the **Non-Porting Switching Process** beyond the one **Working Day** time limit set out in **Condition C7.38** or **Condition C7.39**, or where there is an abuse of the **Porting Process** or the **Non-Porting Switching Process** by them or on their behalf, the **Regulated Provider** ~~or Communications Providers~~ to whom the **Relevant Subscriber** wants to switch, as applicable, shall provide reasonable compensation as soon as is reasonably practicable to the relevant **Mobile Switching Customer** for such failure.

C7.44 All **Regulated Providers** which provide ~~Mobile Communications Services~~ to **Relevant Subscribers** shall set out in plain English and in an clear, comprehensive and easily accessible manner for each relevant **Mobile Switching Customer** guidance on how they can access the compensation provided for in **Condition C7.43**, and how any compensation will be paid to them.

Schedule 2

B3 Number portability

This condition sets out the rules which communications providers must follow when customers request to take their landline and/or mobile number(s) with them when changing provider.

Scope

- B3.1 This **Condition** applies to any person who provides:
- (a) an **Electronic Communications Network**; or
 - (b) an **Electronic Communications Service** to a **Subscriber** with a number or numbers from the **National Telephone Numbering Plan**.
- B3.2 For the purposes of this **Condition**:
- (a) any such person referred to in **Condition** B3.1 is a '**Regulated Provider**'; and
 - (b) any such **Subscriber** referred to in **Condition** B3.1(b) is a '**Relevant Subscriber**'.

Number Portability

- B3.3 The **Regulated Provider** shall provide **Number Portability** within the shortest possible time, including subsequent activation, on reasonable terms and conditions, including charges, to any of its **Relevant Subscribers** who so request.
- ~~B3.4 In the case of **Mobile Number Portability**, where the request is for porting a total of fewer than 25 **Mobile Numbers**, the **Donor Provider** shall:~~
- ~~(a) allow Relevant Subscribers to request a PAC over the phone; and~~
 - ~~(b) where a Relevant Subscriber contacts the Donor Provider by phone, provide the PAC immediately over the phone where possible or by SMS within two hours of the request or by another reasonable mechanism if requested by the Relevant Subscriber and consented to by the Donor Provider.~~
- B3.4 The **Regulated Provider** shall ensure:
- ~~(a) in the case of Mobile Number Portability, porting of these numbers and their subsequent activation shall be completed within one business day from the receipt by the Recipient Provider of the Relevant Subscriber Request to Port from its new Subscriber; and~~
 - (b) in all other cases, **other than Mobile Number Portability (as to which see Conditions C7.38 and C7.39)**, porting of these numbers and their subsequent activation shall be completed within one business day once all necessary validation processes have been

completed, the network connection is ready for use by the **Relevant Subscriber**, and the **Donor Provider** has received a request to activate the porting of these numbers from the **Recipient Provider**.

- B3.5** ~~Subject to paragraph B3.5(a), the~~ **The Recipient Provider** shall request porting from the **Donor Provider** as soon as it is reasonably practicable after receiving the **Relevant Subscriber Request to Port** from its new **Subscriber**.
- B3.6** The **Regulated Provider** shall, pursuant to a request from another **Regulated Provider**, provide **Portability** as soon as is reasonably practicable in relation to that request on reasonable terms. Any charges for the provision of such **Portability** shall be made in accordance with the following principles:
- (a) subject always to the requirement of reasonableness, charges shall be cost oriented and based on the incremental costs of providing **Portability** unless:
 - (i) the **Donor Provider** and the **Recipient Provider** have agreed another basis for the charges, or
 - (ii) **Ofcom** has directed that another basis for charges should be used;
 - (b) the **Donor Provider** shall make no charge in relation to **Porting System Set-Up Costs** or **Additional Conveyance Costs**;
 - (c) in respect of **Mobile Portability**, the **Donor Provider** shall make no charge or annual fee for ongoing costs relating to registration of a ported **Telephone Number** or a **Relevant Subscriber**;
 - (d) charges levied by the **Donor Provider** shall be based on the reasonable costs incurred by it in providing **Portability** with respect to each **Telephone Number**;
 - (e) any direct charges to **Relevant Subscribers** for providing **Number Portability** do not act as a disincentive to **Subscribers** against changing their **Regulated Provider**.
- B3.7** Where the **Regulated Provider** provides **Portability** in accordance with **Condition B3.6**:
- (a) the **Recipient Provider**; and
 - (b) the **Portability Transit Provider**,
- shall, as appropriate, provide **Portability** on reasonable terms.
- B3.8** The **Regulated Provider** shall, on written request, provide **Ofcom** with a record of each **Telephone Number** in relation to which it is providing **Portability**, specifying the relevant **Recipient Provider** in each case.
- B3.9** The **Regulated Provider** shall inform the **Relevant Subscriber** of the date when **Number Portability** will be provided to that **Subscriber**.
- B3.10** Where **Regulated Providers** delay the porting of a **Telephone Number** that is not a **Mobile Number** for more than one business day or where there is an abuse of porting by them or

on their behalf, they shall provide reasonable compensation as soon as is reasonably practicable to the **Relevant Subscriber** for such delay and/or abuse.

B3.11 The **Regulated Provider** shall set out in plain English and in a ~~clear, comprehensive and easily accessible manner~~ form for each **Relevant Subscriber** how **Relevant Subscribers** can access the compensation provided for in paragraph B3.10 above, and how any compensation will be paid to the **Subscriber**.

Schedule 3

1. In the Definitions section of the General Conditions of Entitlement³³⁹, each of the following new definitions shall be inserted in the appropriate alphabetical place:

~~**Early Termination Charge** means the charge payable by the **Switching Customer** or **Subscriber** for the termination of the contract before the end of the minimum contract period.~~

~~**Mobile Device** means **Apparatus** designed or adapted to be capable of being used while in motion through which a **Communications Provider** is able to provide, and the person using the **Apparatus** is able to receive, **Mobile Communications Services**.~~

Business Mobile Tariff means a business tariff as provided for in a contract for the supply of **Mobile Communications Services**.

Mobile Switching means where a **Subscriber** transfers or requests to transfer or considers transferring the provision of **Mobile Communications Services** from one **Communications Provider** to another **Communications Provider**, with or without **Mobile Number Portability**.

Mobile Switching Customer means a **Subscriber** who is engaged in **Mobile Switching**.

Non-Porting Switching Process means the process set out in ~~General Condition C7.21 to C7.44~~ enabling a **Subscriber** to switch from one **Communications Provider** which provides **Mobile Communications Services** to another such **Communications Provider**, but not to retain their **Mobile Number**.

N-PAC means a unique code used to signify the **Donor Provider**'s consent to a **Subscriber** being entitled to switch to another **Communications Provider** without the **Subscriber** porting their **Mobile Number**.

Porting Process means the process set out in ~~General Condition C7.21 to C7.44~~ enabling a **Subscriber** to switch from one **Communications Provider** which provides **Mobile Communications Services** to another such **Communications Provider**, and to retain their **Mobile Number(s)**. This process includes activation by the **Communications Provider** to whom the **Subscriber** has switched, of the **Mobile Number(s)** that has(have) been ported.

Residential Mobile Tariff means a residential tariff as provided for in a contract for the supply of **Mobile Communications Services**.

³³⁹ As revised on 19 September 2017.

SIM Activation means the process allowing a **Communications Provider**, to whom a **Subscriber** is moving for the supply of **Mobile Communications Services**, to verify the identity of that **Subscriber**. This process is carried out by the **Subscriber** with the use of their Subscriber Identity Module (SIM) card which they will have obtained from the **Communications Provider** to whom they are moving. Under the **Non-Porting Switching Process**, **SIM Activation** also includes activation of the **Mobile Number(s)** that a **Subscriber** is taking from a **Communications Provider** to whom they have switched.

Switching Information means information about any of the following that are applicable to a **Subscriber** to whom the information is provided:

- (a) any **Early Termination Charge(s)** that is/are payable, presented as a single (where applicable, aggregated) charge;
- ~~(b) charges payable as a result of termination of the contract before the end of the minimum contract period for any **Mobile Device** that the **Subscriber** is using to receive the **Mobile Communications Services** from the **Communications Provider**;~~
- (b) any credit balance in respect of any **Prepaid Mobile Service**;
- (c) the web link to the log-in page for the **Mobile Switching Customer's** account with the **Regulated Provider**;
- (d) whether the handset is provided to the **Subscriber** on a separate contractual basis to the **SIM**, and if it is, the amount still payable under that contract after transfer to another **Communications Provider** and/or the date on which the **Mobile Switching Customer** will cease to pay for the handset;
- (e) whether transferring to another **Communications Provider** for **Mobile Communications Services** will have an impact on any other service provided to the **Mobile Switching Customer**; and
- (f) any other factual information the **Regulated Provider** considers the **Mobile Switching Customer** should know about prior to transferring to another **Communications Provider** for **Mobile Communications Services**.