



# Automatic Compensation: Annexes

Consultation

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## Annex 1

# Responding to this consultation

## How to respond

- A1.1 Ofcom would like to receive views and comments on the issues raised in this document, **by 5pm on Monday 5 June 2017**.
- A1.2 We strongly prefer to receive responses via the online form at <https://www.ofcom.org.uk/consultations-and-statements/category-1/automatic-compensation>. We also provide a cover sheet (<http://stakeholders.ofcom.org.uk/consultations/consultation-response-coversheet/>) for responses sent by email or post; please fill this in, as it helps us to maintain your confidentiality, and speeds up our work. You do not need to do this if you respond using the online form.
- A1.3 If your response is a large file, or has supporting charts, tables or other data, please email it to [automatic.compensation@ofcom.org.uk](mailto:automatic.compensation@ofcom.org.uk), as an attachment in Microsoft Word format, together with the cover sheet (<http://stakeholders.ofcom.org.uk/consultations/consultation-response-coversheet/>). This email address is for this consultation only, and will not be valid after **Monday 5 June 2017**.
- A1.4 Responses may alternatively be posted to the address below, marked with the title of the consultation.
- Automatic Compensation  
Ofcom  
Riverside House  
2A Southwark Bridge Road  
London SE1 9HA
- A1.5 If you would like to submit your response in an alternative format (e.g. a video or audio file), please contact Joanna Brownlee on 020 7981 4136, or email [automatic.compensation@ofcom.org.uk](mailto:automatic.compensation@ofcom.org.uk)
- A1.6 We do not need a paper copy of your response as well as an electronic version. We will acknowledge receipt if your response is submitted via the online web form, but not otherwise.
- A1.7 You do not have to answer all the questions in the consultation if you do not have a view; a short response on just one point is fine. We also welcome joint responses.
- A1.8 It would be helpful if your response could include direct answers to the questions asked in the consultation document. The questions are listed at Annex 3. It would also help if you could explain why you hold your views, and what you think the effect of Ofcom's proposals would be.
- A1.9 If you want to discuss the issues and questions raised in this consultation, please contact Joanna Brownlee on 020 7981 4136, or by email to [automatic.compensation@ofcom.org.uk](mailto:automatic.compensation@ofcom.org.uk)

## Confidentiality

- A1.10 Consultations are more effective if we publish the responses before the consultation period closes. In particular, this can help people and organisations with limited resources or familiarity with the issues to respond in a more informed way. So, in the interests of transparency and good regulatory practice, and because we believe it is important that everyone who is interested in an issue can see other respondents' views, we usually publish all responses on our website, [www.ofcom.org.uk](http://www.ofcom.org.uk), as soon as we receive them.
- A1.11 If you think your response should be kept confidential, please specify which part(s) this applies to, and explain why. Please send any confidential sections as a separate annex. If you want your name, address, other contact details or job title to remain confidential, please provide them only in the cover sheet, so that we don't have to edit your response.
- A1.12 If someone asks us to keep part or all of a response confidential, we will treat this request seriously and try to respect it. But sometimes we will need to publish all responses, including those that are marked as confidential, in order to meet legal obligations.
- A1.13 Please also note that copyright and all other intellectual property in responses will be assumed to be licensed to Ofcom to use. Ofcom's intellectual property rights are explained further at <http://www.ofcom.org.uk/terms-of-use/>

## Next steps

- A1.14 Following this consultation period, Ofcom plans to publish a statement around the end of 2017.
- A1.15 If you wish, you can register to receive mail updates alerting you to new Ofcom publications; for more details please see <http://www.ofcom.org.uk/email-updates/>

## Ofcom's consultation processes

- A1.16 Ofcom aims to make responding to a consultation as easy as possible. For more information, please see our consultation principles in Annex 2.
- A1.17 If you have any comments or suggestions on how we manage our consultations, please call our consultation helpdesk on 020 7981 3003 or email us at [consult@ofcom.org.uk](mailto:consult@ofcom.org.uk). We particularly welcome ideas on how Ofcom could more effectively seek the views of groups or individuals, such as small businesses and residential consumers, who are less likely to give their opinions through a formal consultation.
- A1.18 If you would like to discuss these issues, or Ofcom's consultation processes more generally, please contact Steve Gettings, Ofcom's consultation champion:

Steve Gettings  
Ofcom  
Riverside House  
2a Southwark Bridge Road  
London SE1 9HA  
Tel: 020 7981 3601  
Email [steve.gettings@ofcom.org.uk](mailto:steve.gettings@ofcom.org.uk)

## Annex 2

# Ofcom's consultation principles

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

### Before the consultation

- A2.1 Wherever possible, we will hold informal talks with people and organisations before announcing a big consultation, to find out whether we are thinking along the right lines. If we do not have enough time to do this, we will hold an open meeting to explain our proposals, shortly after announcing the consultation.

### During the consultation

- A2.2 We will be clear about whom we are consulting, why, on what questions and for how long.
- A2.3 We will make the consultation document as short and simple as possible, with a summary of no more than two pages. We will try to make it as easy as possible for people to give us a written response. If the consultation is complicated, we may provide a short Plain English / Cymraeg Clir guide, to help smaller organisations or individuals who would not otherwise be able to spare the time to share their views.
- A2.4 We will consult for up to ten weeks, depending on the potential impact of our proposals.
- A2.5 A person within Ofcom will be in charge of making sure we follow our own guidelines and aim to reach the largest possible number of people and organisations who may be interested in the outcome of our decisions. Ofcom's Consultation Champion is the main person to contact if you have views on the way we run our consultations.
- A2.6 If we are not able to follow any of these seven principles, we will explain why.

### After the consultation

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

## Cover sheet for response to an Ofcom consultation

### BASIC DETAILS

Consultation title:

To (Ofcom contact):

Name of respondent:

Representing (self or organisation/s):

Address (if not received by email):

### CONFIDENTIALITY

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

Nothing	<input type="checkbox"/>	Name/contact details/job title	<input type="checkbox"/>
Whole response	<input type="checkbox"/>	Organisation	<input type="checkbox"/>
Part of the response	<input type="checkbox"/>	If there is no separate annex, which parts?	

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

### DECLARATION

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

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

Name

Signed (if hard copy)

## Annex 3

# Consultation questions

A3.1 This Annex lists the questions that we are consulting on.

*Question 1: Do you agree with our framework for assessment?*

*Question 2: Do you agree that in landline and broadband markets consumers are insufficiently protected from poor quality of service and that intervention is required?*

*Question 3: Do you agree that it is appropriate for automatic compensation to be introduced for landline and broadband consumers?*

*Question 4: Do you agree with our proposal to provide automatic compensation when a loss of service takes more than two full working days to be restored?*

*Question 5: Do you agree with our proposal to provide automatic compensation when there are delays in provisioning a landline or fixed broadband service?*

*Question 6: Do you agree with our proposal to provide automatic compensation when missed appointments take place with less than 24 hours of prior notice?*

*Question 7: Do you agree with our proposals on transparency?*

*Question 8: Do you agree with our proposals on the method and timing of payment?*

*Question 9: Do you agree with our proposal not to have a payment cap (and our assessment of the reasons for and against it)? - If you consider there should be a payment cap, what should it be and why?*

*Question 10: Do you agree with our proposed exceptions?*

*Question 11: Do you agree we should not allow for a blanket exception for force majeure-type events?*

*Question 12: Do you agree with our proposal on complaints and disputes?*

*Question 13: Do you agree with the impacts we describe? Please wherever possible give your reasoning and provide evidence for your views.*

*Question 14: Do you agree with our provisional conclusions on residential landline and broadband services?*

*Question 15: Do you agree with our proposal of 12 months to implement automatic compensation?*

*Question 16: Do you agree with our proposal to monitor the impact of automatic compensation?*

*Question 17: Do you agree with our proposals for greater transparency regarding service quality and compensation for products targeted at SMEs?*

*Question 18: Do you agree with our provisional conclusions not to introduce automatic compensation for delayed repair of mobile loss of service?*

*Question 19: Do you have any comments on the draft condition set out in Annex 14 to this document?*

## Annex 4

# Estimates of harm from quality of service problems

## Introduction and summary

- A4.1 In this Annex we describe our approach to estimating the level of harm that consumers suffer when they experience quality of service problems in their fixed telecoms services.
- A4.2 Quality of service problems harm consumers in multiple ways, including through factors such as loss of value from unavailability of a service, wasted time in reporting a failure, anxiety and distress. We have identified the different aspects of harm that occur for each type of quality of service failure and where possible attempted to quantify them to inform our proposals.
- A4.3 Our approach to quantification draws upon a range of evidence including consumer surveys. These provide evidence on the level of harm, however, due to limited sample sizes for some questions, outliers and the risk of stated preference biases, these surveys provide a relatively wide range for our harm estimates. We therefore supplement our survey based estimates with other sources of evidence, including current compensation levels and sectoral and international benchmarks.
- A4.4 We use all of these sources of evidence to refine the range taken from our surveys and reach a point estimate. Ultimately while we acknowledge that the evidence presented here can support a range of values, we have needed to produce a point estimate for harm that can be used to inform our proposals for the level of automatic compensation. This value reflects our view, on the basis of the evidence reported here, of the most likely value of harm. Reaching this point estimate is not a mechanical process, rather we are aware that a degree of regulatory judgement is involved. This section describes the process and principles we have used when making that provisional judgement for the purposes of this consultation.
- A4.5 Using this approach, we have estimated the level of harm from different types of quality of service failure for landline and broadband as shown in Figure A4.1 below.

**Figure A4.1: Summary of harm estimates for landline and broadband**

	Loss of Service (£ per day)	Delayed provisioning (£ per day)	Missed Appointments (£ per incident)
Harm estimate	10	6	30

## Services affected

- A4.6 The majority of consumers have and use both landline and broadband services. When consumers suffer quality of service problems, these may affect just one of their services or both services simultaneously.

- A4.7 Typically, where loss of service occurs for landline services, this will also affect the availability of any associated broadband service. If the landline service is affected because of an underlying fault with the line, then the broadband service will not function either. However, the reverse is not true. Broadband services can be affected without the underlying landline service being affected.
- A4.8 Similarly delays in provisioning that affect a landline service may also influence the availability of any associated broadband service, but, again, the reverse is not necessarily the case.
- A4.9 We recognise that the type of harm incurred by consumers may differ depending on the services affected. In general, the harm from loss of a landline service and loss of a broadband service will be different. Further, the harm incurred from the loss of both services simultaneously may not reflect the sum of the harm of the loss of each service individually. For example, if consumers can substitute their communications use between the two types of service, the sum of the harm from the loss of either individual service may be less than the harm from the simultaneous loss of both services.
- A4.10 We could attempt to estimate the harm incurred depending on the service or combination of services affected. However, we are proposing a single payment for reasons of practicality and so have calculated a weighted average of the harm for each type of incident, weighted by the frequency with which they occur.<sup>1</sup> For example, our consumer research indicates that for loss of service 42% of instances are loss of both landline and broadband, 50% are loss of broadband only and 8% are loss of landline only.<sup>2</sup> Therefore, when we calculate our estimate of the average harm from a loss of service, it will be based on the harm from a simultaneous loss of voice and broadband, harm from a loss of broadband only and harm from a loss of landline only in the above proportions.

## Types of harm

- A4.11 Before we turn to quantification we first describe the different factors that contribute to the overall harm consumers suffer when they experience a quality of service failure, although not all of these will be present in each specific instance.

### Denied use of a communications service

- A4.12 When consumers enter a contract with their provider for landline and/or broadband services they expect to receive those services. If they experience a loss of service (or a delayed provision where they have no alternative communications service available) they are harmed by their inability to use a service in the way they had expected. In effect, they are purchasing a service that they are not actually receiving.
- A4.13 When consumers are unable to use the communications service(s) they were expecting to use they may seek an alternative during this period of unavailability. Some consumers may already possess an alternative (e.g. a smartphone with a contract for sufficient usage of minutes and data to cover the landline or broadband service failure), whereas others may incur financial costs to get an alternative (e.g.

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<sup>1</sup> Paragraph 5.34.

<sup>2</sup> Jigsaw, *Automatic Compensation*, March 2017, slide 29:

[https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0026/98711/automatic-compensation-jigsaw-report.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0026/98711/automatic-compensation-jigsaw-report.pdf).

use an internet café, purchase a dongle to use mobile broadband, increase their bundle of voice and/or mobile data).

- A4.14 The potential to take an alternative communications service means that the harm from denied use of the service may not be equal to the full value from use of that service, if some value from the alternative can be used to mitigate the harm from the first service.

### **Wasted or impaired time**

- A4.15 Consumers often require visits from an engineer to install or repair a service. This involves a consumer being at home in order to grant access for the engineer. If this appointment is missed or rearranged at short notice then the consumer is likely to have wasted time (or faced impaired leisure time) in waiting during this appointment window.

### **Disruption in a consumer's activity schedule**

- A4.16 When consumers experience quality of service failures they may need to rearrange their activities in a way which is detrimental to them. For example, some consumers may seek to work from home and if they lose service will be unable to do this at a given time. In the short term they may replace the time they would have spent working with leisure time and subsequently 'make-up' the lost working time at a later date. However, this rearrangement may incur its own detriment due to conducting the work at a less convenient or productive time. There could also be further consequences if work deadlines (or time sensitive leisure activities) are missed.

### **Time and effort spent to rectify the failure**

- A4.17 When consumers experience quality of service problems they typically have to spend time and effort to rectify the situation. These attempts at rectification may encompass both actions they take in an attempt to fix the problem themselves (e.g. resetting and testing devices) as well as action taken to report the issue to their provider and to follow-up on the provider's response. In both instances this time and effort is a harm because in the normal course of events they would not undertake these activities.

### **Stress and anxiety**

- A4.18 Consumers are likely to experience annoyance, frustration, or anxiety when they experience quality of service failures. These feelings may arise simply because the service has failed or because of their engagement with their provider in trying to rectify the problem.

### **Approaches to quantifying harm**

- A4.19 Having identified the aspects of harm above, we have considered a range of evidence and approaches for estimating harm for each type of quality of service failure. These include survey based approaches, evidence on current compensation payments and evidence from external benchmarks. We describe each of these sources of evidence below before describing how we have drawn them together to reach our proposed estimate.

## Survey based: Direct estimation

- A4.20 One approach to estimating harm is to directly ask consumers. For example, asking consumers who experienced quality of service problems about the level of compensation they felt would be reasonable given their experience or asking consumers for their willingness to pay to avoid a loss of service, or for their willingness to accept payment when exposed to such an incident.
- A4.21 These approaches ought to yield an estimate that encompasses all relevant types of harm. Since consumers are being asked to consider their position as a whole, there is no need for this estimate to breakdown the overall harm into individual components of the type set out in the section above.
- A4.22 While these approaches have the potential to provide a direct estimate of harm, the kind of questions needed to use this approach can be challenging for consumers to answer since they tend to involve answers which are subjective rather than factual (leading to a lot of “don’t know” answers) and some biases can affect consumer responses.<sup>3</sup>

### Reasonable level of compensation

- A4.23 Our consumer research asked consumers who had experienced quality of service problems what a reasonable level for compensation would have been.<sup>4</sup>
- A4.24 The results of these questions are shown in Figure A4.2 below. For loss of service, the sample is comprised only of individuals who had experienced a loss of service incident (regardless of whether or not they actually received compensation). Having actually experienced this category of problem these individuals should be able to provide an estimate based on the reality of the problem they faced. For missed appointments, we anticipated that the sample size of those who had experienced a missed appointment would be too small to robustly draw inferences from responses of only those who had experienced missed appointments. We therefore additionally asked a question about a hypothetical missed appointment and this is reported in the Figure below. Our consumer research did not ask specific questions about compensation for delayed provisions.

**Figure A4.2: Reasonable level of compensation**

	Consumer stated reasonable level for compensation		
	Mean	95% confidence Interval (lower end)	95% confidence Interval (upper end)
Loss of Service <sup>1</sup> (£ per day)	10.43	5.55	15.31
Missed appointments <sup>2</sup> (£ per incident)	52.00	47.25	56.75

<sup>1</sup> <H1g>: What was the monetary value of this compensation?

Base: All that received compensation from the provider and found it reasonable at H1h (n=14)  
 <H1i> How much would have been enough to compensate for the {problem} you experienced?

<sup>3</sup> For example, when asked about the appropriate level of compensation consumers might consider issues of blame (e.g. no compensation is appropriate because it wasn't my provider's fault), that are not relevant to the impact that the loss of service had on the household but nonetheless affect their answer.

<sup>4</sup> Consumers were first asked if they had received compensation, if so, whether this was reasonable and if not, how much would have been reasonable. Jigsaw, *Automatic Compensation*, March 2017, slide 49. [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0026/98711/automatic-compensation-jigsaw-report.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0026/98711/automatic-compensation-jigsaw-report.pdf).

Base: All that received compensation from the provider and did not find it reasonable at H1g (n=12) <H1k> Thinking back to the loss of service you have described and all of the impacts that the loss of service had on your household what level of payment do you think would be enough to compensate your household for that impact?

All who experienced a complete loss of service but did not receive ask for or get compensation (n=281)).

<sup>2</sup> <I13a> I'd like you to imagine a situation where you had been given an appointment time by your supplier for an engineer to visit your home to install, repair or upgrade one of your services and the engineer did not turn up at all. Would you expect to be compensated for this missed appointment? and if so, how much?

Base: All respondents (n=2016) Respondents who answered "Would expect to receive but not sure how much" (n=450) and "Not sure if should receive" (n=297) have been excluded.

Source: Jigsaw, *Automatic Compensation*, March 2017, slides 49 and slide 59:

[https://www.ofcom.org.uk/data/assets/pdf\\_file/0026/98711/automatic-compensation-jigsaw-report.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0026/98711/automatic-compensation-jigsaw-report.pdf).

## Willingness to pay

- A4.25 Our consumer research also asked consumers about their willingness to pay to receive faster repairs and provisions. Conceptually willingness to pay estimates should correspond to harm since, absent biases in survey responses, we would expect consumers to be willing to pay an amount up to the level of harm they incur.
- A4.26 In order to make responding to the willingness to pay questions easier we narrowed the scope of our questions to cover only willingness to pay once a quality of service problem has arisen.
- A4.27 The willingness to pay questions in our consumer research were prefaced by providing respondents with information about average quality of service levels. For loss of service, we told respondents that the average repair time is 2 days (from the time a fault is reported) and they were asked how much they were willing to pay to receive a faster repair either within 1 day or on the same day.<sup>5</sup> For example, the questions were:<sup>6</sup>
- A4.28 "If you lose service, most providers will resolve your fault within two days.
- Having lost service, would you pay £15 for a repair within 1 day?
  - Having lost service, would you pay £10 for a repair within 1 day?
  - Having lost service, would you pay £5 for a repair within 1 day?
- A4.29 Figure A4.3 shows the results for both repair scenarios that were presented: 1 day and same day. We interpret this question that to avoid one further day of harm (i.e. reduce an average repair time of 2 days, to a fix within 1 day) consumers would be willing to pay around £4-5.<sup>7</sup> On this basis, the responses imply a daily rate of harm of £4-5.

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<sup>5</sup> The intention was that a repair within 1 day meant within 24 hours whereas a same day repair meant on the same calendar day. Depending on how respondents interpreted this question, either of the questions could be construed as representing a saving of one day in repair time.

<sup>6</sup> Jigsaw, *Automatic Compensation*, March 2017, slide 124, Qs LOS.WTP5-10.  
[https://www.ofcom.org.uk/data/assets/pdf\\_file/0026/98711/automatic-compensation-jigsaw-report.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0026/98711/automatic-compensation-jigsaw-report.pdf).

<sup>7</sup> Taking the conservative assumption that consumers are willing to pay only the lower bound of each category which they responded affirmatively to. For example, if a consumer said they were willing to pay £15 for a faster repair, we assume that they are only willing to pay exactly £15 although they may be willing to pay more.

**Figure A4.3: Willingness to pay for faster repairs**

	1 day repair	Same day repair
Not prepared to pay more	56%	52%
£5	18%	19%
£10	7%	6%
£15	19%	23%
Average willingness to pay (including those not prepared to pay more) (£)	<b>£4.45</b>	<b>£5.00</b>

Base: All with landline and/or broadband (n=1,898)

Source: Jigsaw, *Automatic Compensation*, March 2017, slide 124:

[https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0026/98711/automatic-compensation-jigsaw-report.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0026/98711/automatic-compensation-jigsaw-report.pdf).

A4.30 By asking consumers about their willingness to pay for repair to a loss of service that has already occurred, we may not be fully capturing all aspects of harm that occur from the loss of service. For example, there may be a degree of harm incurred from simply experiencing a loss of service itself, regardless of duration, such as time taken to restore that service. Further, given that the estimate is based on a sample of respondents who may not have experienced loss of service, we would tend to put less weight on this evidence in contrast to responses from consumers (as detailed in Figure A4.2) who had experienced a loss of service.

A4.31 Our consumer research also asked consumers about their willingness to pay to receive faster provisions. These questions were primarily designed for the purposes of Ofcom's Quality of Fixed Networks project, hence these questions were framed around receiving faster provisions, rather than specifically avoiding delays beyond the customer committed date.<sup>8</sup> As such the responses are not fully aligned with the quality of service problems we seek to address in this consultation and we place limited weight upon them. Nevertheless, we summarise the findings below.

A4.32 For provisions, respondents were first informed that an appointment is usually available within 12 days and costs £40. They were then asked whether they would pay more (ranging from £5-15) to receive a faster appointment (either 2 days or 4 days quicker). Figure A4.4 below shows the results.

**Figure A4.4: Willingness to pay for faster provisions**

	2 days quicker provision	4 days quicker provision
Not prepared to pay more	64%	56%
£5	16%	18%
£10	7%	7%
£15	13%	19%
Average willingness to pay (including those not prepared to pay more) (£)	<b>£3.45</b>	<b>£4.45</b>
Equivalent daily value (£)	<b>£1.73</b>	<b>£1.11</b>

Sample: All with landline and/or broadband (n=1,898)

<sup>8</sup> See, Jigsaw, *Automatic Compensation*, March 2017, slide 4:

[https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0026/98711/automatic-compensation-jigsaw-report.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0026/98711/automatic-compensation-jigsaw-report.pdf).

Source: *Jigsaw, Automatic Compensation, March 2017, slide 122:*

[https://www.ofcom.org.uk/data/assets/pdf\\_file/0026/98711/automatic-compensation-jigsaw-report.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0026/98711/automatic-compensation-jigsaw-report.pdf).

A4.33 Based on these results we have calculated average willingness to pay across all respondents (including those who are willing to pay more and those who are not) of between £3-4 equivalent to a daily rate of between £1-2. As noted above this corresponds to receiving a service provision faster when the consumer is in the process of planning the date to receive this. It seems likely they would pay more to ensure that a planned date is not missed.

### **Survey based: Component based estimation**

A4.34 Another survey informed approach to estimating harm, is to individually measure the relevant components of harm and combine these to determine the net effect. In practice, this method involves asking separate questions about the different aspects of harm. However, while some factors are amenable to quantification, others, such as stress and anxiety are not.

A4.35 We describe below how we implement this component based approach for each type of quality of service failure. The quality of service issue related to loss of service includes most of the types of harm identified in the section above. Harm from delayed provisioning is likely to be similar to this where a service is lost as a result of the delay (and lower otherwise). We do not have direct evidence on the components of provisioning harm, rather we return to the estimate of provisioning harm in reaching our conclusions in paragraphs A4.66-A4.73 below.

### Loss of service

#### *Denied use of a communications service*

A4.36 For this component, we are seeking to measure the denied enjoyment due to unavailability of a communications service. This is the consumers' value of the service and is comprised of the price that they pay for it and any 'consumer surplus' in addition to this (explained further below). However, this component is intrinsically unmeasurable without estimating the demand curve for a consumer (see A7.6–A7.7 for a discussion of estimating demand curves). We have not undertaken such estimation in this case, given the complexity associated with such analysis and the data needed to conduct this robustly.

A4.37 Our approach to measuring this component is instead based on data we can observe, i.e. the prices of communications services and expenditure on alternatives used during loss of service. We use each of these separately below.

A4.38 Our first estimate is simply the average price paid for the communications service that is lost. This is a conservative estimate of the consumer's value of the service (i.e. the whole willingness to pay), since it does not capture the consumers' enjoyment from not paying their full willingness to pay. For example, if a consumer pays £40 for fixed voice and broadband per month, but would be willing to pay £80, their (consumer) surplus is £40. Therefore, taking the price paid as a proxy is likely to underestimate harm from loss of service.

A4.39 Our second estimate is the direct costs of an alternative service. To understand the relevance of this, consider the case where the consumer loses use of their service but an alternative service or activity is available and the consumer switches to this.

They may incur costs in taking this alternative and these are costs they would not have otherwise incurred, however, by taking them they are able to use the alternative service and therefore obtain some mitigating value from that service.

#### Disruption in a consumer's activity schedule

- A4.40 When consumers' telecoms services are disrupted they are likely to need to rearrange their planned activities. For example, there may be some consumers being forced to take leisure time when they otherwise would choose to work. When doing so, their leisure choices may be restricted (e.g. family and/or friends are working, their communications service is unavailable so they cannot conduct internet based leisure).
- A4.41 In these circumstances, when an alternative service cannot be used, the time is not entirely wasted. Rather the harm from this factor is probably best measured through the harm of disruption rather than lost time per se. We have elected to reflect this factor qualitatively.

#### Time and effort spent to rectify the failure

- A4.42 Where consumers spend time and effort to try and rectify a fault, this is in essence a reduction in the time available, either for leisure or work, to the consumer. We propose to value this time at the value of leisure, because time to restore the service is likely to be taken in leisure time.
- A4.43 We are aware that there are a range of different valuations for time. For present purposes we have used estimates from the Department for Transport.<sup>9</sup> This value is currently £5.51 per hour in 2017 prices.

#### Stress and anxiety

- A4.44 Harm from stress and anxiety may be a significant harm. However, given the intangible nature of this component we are unable to quantify this as a separate component.

#### Combining the components for loss of service

- A4.45 We have used two different methodologies for estimating harm under the component based approach to reflect the uncertainty in estimating the harm from denied enjoyment of a communications service. These two methodologies are shown as "total harm estimate 1" and "total harm estimate 2" in the Figure A4.5 below. They reflect the use of the price of the lost communications service and the direct financial cost of alternative workarounds, respectively, as proxies for the consumer value of the first choice communications service.

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<sup>9</sup> Department for Transport, webTAG data book, [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/544166/webtag-data-book-summer-2016-v1-6.xls](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/544166/webtag-data-book-summer-2016-v1-6.xls), Tab A1.31, cell F46, with the Price year and Value year set at 2017 in the User Parameters sheet.

**Figure A4.5: Summary of component based estimates (£ per day)—Loss of service<sup>10</sup>**

	Mean	95% confidence Interval (lower end)	95% confidence Interval (upper end)
1. Price	1.24	1.24	1.24
2. Direct financial cost	15.43	3.67	22.31
3. Value of time spent to restore service	3.78	1.16	5.31
<b>Total harm estimate 1 (Rows 1 + 3)</b>	5.02	2.40	6.55
<b>Total harm estimate 2 (Rows 2 + 3)</b>	19.21	4.83	27.63

Note: Due to a large number of outliers the value of time spent to restore a service is based on the median number of days (0.1 days) spent trying to restore the service.

<F7c> Thinking about the factors you mentioned, what were the direct financial costs to you (e.g. cost of mobile calls) and the people in your household that were caused by your most recent loss of service / delay in service installation?

Base: All that did something and found an alternative workaround (n=152).

<F8b> How much time did you and other people in your household spend trying to get your service(s) fixed? Please think about all the things that you and others in your household spent time on to resolve the loss (e.g. time spent on the phone with your provider or time spent trying to fix the problem yourselves). It should not include the time spent waiting for an engineer visit(s).

Base: All loss of service that took time to resolve (n=107).

Source: Ofcom calculations based on Jigsaw, Automatic Compensation, March 2017, slides 39 and 42: [https://www.ofcom.org.uk/data/assets/pdf\\_file/0026/98711/automatic-compensation-jigsaw-report.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0026/98711/automatic-compensation-jigsaw-report.pdf) and CMR 2016.

## Missed appointments

### *Time spent waiting for a missed appointment*

A4.46 If an appointment is missed with the engineer not arriving during the scheduled window, then we consider the consumer to have experienced wasted time. We recognise that in some instances the consumer will be informed that the appointment will be missed part way through the appointment window and that therefore they may not have to wait for the full window.

A4.47 We propose to value this time at the value of leisure time for the same reasons as given in paragraphs A4.42-A4.43 above.

### *Time spent rearranging an appointment*

A4.48 Once an appointment has been missed, consumers are likely to need to follow-up with their provider to report the missed appointment and to request and arrange a new appointment. We consider that this is wasted time that is a harm to the consumer.

A4.49 We also propose to value this time at the value of leisure time (as discussed in paragraphs A4.42-A4.43).

<sup>10</sup> The ranges given above are relatively wide. We note that where ranges are dependent upon the summation of confidence intervals of multiple components, the appropriateness of this depends on the extent to which each of the components can be considered independent. In general, however, it would be expected that the confidence intervals of the sum (i.e. the joint distribution) would be narrower than a simple summation of the individual confidence intervals.

- A4.50 Figure A4.6 below shows our estimates of the harm from a missed appointment. Responses to these questions contained a number of outliers where it is apparent that respondents had misinterpreted the questions (for example respondents stating that they had waited for an engineer for 48 hours, which could have been the length of time they waited before an engineer arrived rather than the time they waited during an allotted appointment slot). Therefore, we have excluded these outliers.
- A4.51 As a cross-check we show in the bottom row of the table the total harm that would arise for a consumer that had a 4 hour appointment window and also experienced the average time to rearrange an appointment.

**Figure A4.6: Summary of component based estimates—Missed appointments<sup>11</sup>**

	Mean	95% confidence Interval (lower end)	95% confidence Interval (upper end)
Harm from time spent waiting (£) <sup>1</sup>	25.90	20.45	31.34
Harm from time spent to rearrange (£)	5.51	3.50	7.52
<b>Harm estimate (£)</b>	<b>31.41</b>	<b>23.95</b>	<b>38.86</b>
Cross-check: Harm estimate assuming length of time waiting 4hr wait window	27.55	-	-

Note: <sup>1</sup>This value excludes outliers of any respondent who said they waited for 1 day or longer for the engineer to arrive.

<I4> How much time did you spend waiting for the engineer to arrive?

<I8> How much time did you and other people in your household spend trying to get another appointment? (e.g. time spent on the phone with your provider). It should not include the time spent while waiting for the original missed appointment.

Base: All that experienced a missed appointment n=72.

Source: Ofcom calculations based on Jigsaw, Automatic Compensation, March 2017, slide 54: [https://www.ofcom.org.uk/data/assets/pdf\\_file/0026/98711/automatic-compensation-jigsaw-report.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0026/98711/automatic-compensation-jigsaw-report.pdf).

- A4.52 Given the range of uncertainty arising from the various survey based estimates we have considered (stemming in large part from the factors identified at paragraph A4.3 above) it is appropriate to also look at a range of other sources of evidence.

### Current compensation policies and levels

- A4.53 We have had regard to the current level of compensation paid out by providers and their policies in doing so. Current compensation levels are not in themselves a measure of harm, however, we consider that providers are likely to have established levels of compensation that have some, albeit imperfect, relation to the degree of harm incurred for the quality of service problems.
- A4.54 Current compensation levels amongst all consumers experiencing a quality of service failure are relatively low. This is driven by a large number of consumers who do not receive any compensation. We have therefore also examined the levels of

<sup>11</sup> The ranges given above are relatively wide. We note that where ranges are dependent upon the summation of confidence intervals of multiple components, the appropriateness of this depends on the extent to which each of the components can be considered independent. In general, however, it would be expected that the confidence intervals of the sum (i.e. the joint distribution) would be narrower than a simple summation of the individual confidence intervals.

compensation among consumers who have experienced a quality of service problem and also received some monetary compensation. These values are significantly higher. The values are shown in Figure A4.7 below.

### Benchmarks from other sectors and other countries

- A4.55 We have also had regard to the current level of compensation paid out by telecoms providers in other EU countries and by other utility sectors in the UK. We are aware that these are not generally direct comparators of harm per se, but rather of compensation, and they may or may not have been set to mirror an estimated level of harm.
- A4.56 We are also conscious that the types of quality of service problem between different sectors may have a different scale of impact, although this seems more the case for loss of service or delayed provisioning. In the case of missed appointments, the level of harm is more likely to be similar since the primary cost to the consumer is the value of lost time.
- A4.57 Nevertheless, we consider these benchmarks to be broadly informative of the magnitude of harm that may be experienced by quality of service problems. The values are shown in Figure A4.7 below.

**Figure A4.7: Summary of other (non-survey) benchmarks**

	Fixed		
	Loss of service	Provisioning	Missed appointments
	£ per day	£ per day	£ per incident
Current compensation (among all with QoS problem) <sup>1</sup>	0.56	0.30	3.35
Current compensation (among those receiving compensation) <sup>2</sup>	3.69	2.39	24.28
Electricity (absolute) <sup>3</sup>	70.00	-	30.00
Electricity (% applied to comms spend) <sup>4</sup>	56.36	-	-
Gas (absolute) <sup>5</sup>	30.00	-	-
Gas (% applied to comms spend) <sup>6</sup>	22.48	-	-
Water (absolute) <sup>7</sup>	10.00	-	20.00
Water (% applied to comms spend) <sup>8</sup>	11.43	-	-
International: Spain <sup>9</sup>	3.12	-	-
International: France <sup>10</sup>	18.86	-	-
International: Italy <sup>11</sup>	4.40	-	-
International: Netherlands <sup>12</sup>	1.24	-	-

Notes and sources:

<sup>1</sup> This shows the average compensated paid to all consumers who experienced the respective QoS issue. It includes consumers who experienced the QoS issue but did not receive any compensation. Calculated from S135 data collected from operators during August-September 2016.

<sup>2</sup> This shows the average compensation paid to all consumers who received some monetary compensation for the respective QoS issue. It excludes consumers who experienced the QoS issue but did not receive any compensation. Calculated from S135 data collected from operators during August-September 2016.

<sup>3</sup> For loss of service, this is based on compensation liable for loss of electricity to domestic customers during normal weather conditions, at a rate of £35 per additional 12 hours of lost service (£70 per day). This is in addition to an initial £75 payment. Source:

[https://www.ofgem.gov.uk/sites/default/files/docs/2015/04/ofg581\\_guarantee\\_standards\\_booklet\\_updated\\_april15\\_english\\_web\\_0.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/2015/04/ofg581_guarantee_standards_booklet_updated_april15_english_web_0.pdf), page 04.

For missed appointments, this is based on compensation due for appointments missed at a rate of £30 per missed appointment.

[https://www.ofgem.gov.uk/sites/default/files/docs/2015/04/ofg581\\_guarantee\\_standards\\_booklet\\_updated\\_april15\\_english\\_web\\_0.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/2015/04/ofg581_guarantee_standards_booklet_updated_april15_english_web_0.pdf) page 07.

<sup>4</sup> This is the electricity (absolute) amount adjusted by the ratio of average fixed internet and voice spend (£453 per year) compared to average electricity spend (£562 per year); a ratio of 0.81. Average energy spend was taken from <https://www.ofgem.gov.uk/publications-and-updates/infographic-bills-prices-and-profits>. Average fixed internet and voice spend was taken from page 10; [https://www.ofcom.org.uk/data/assets/pdf\\_file/0024/26826/cmr\\_uk\\_2016.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0024/26826/cmr_uk_2016.pdf).

<sup>5</sup> For loss of service, this is based on compensation payable for loss of gas supply to domestic customers at £30 after first 24 hours and £30 for each further 24 hours.

<sup>6</sup> This is the gas (absolute) amount adjusted by the ratio of average fixed internet and voice spend (£453 per year) compared to average gas spend (£604 per year); a ratio of 0.75.

<sup>7</sup> For loss of service this is compensation for each additional 24hr period that supply is not restored. It is in addition to an initial payment of £20 for the initial period. Source: [https://www.ofwat.gov.uk/wp-content/uploads/2015/10/gud\\_pro\\_gss08.pdf](https://www.ofwat.gov.uk/wp-content/uploads/2015/10/gud_pro_gss08.pdf), page 12.

<sup>8</sup> This is the water (absolute) amount adjusted by the ratio of average fixed internet and voice spend (£453 per year) compared to average water spend (£396 per year); a ratio of 1.14. Average water spend was taken from <http://www.ofwat.gov.uk/pn-0914-water-bills-held-down/>.

<sup>9</sup> For fixed services compensation in Spain is the highest of the following amounts: the average of the amount billed for all interrupted services during the three months prior to the service interruption, prorated by the duration of the interruption; or five times the monthly line rental paid in the month in which the interruption occurred, prorated by the duration of the interruption. Source: Cullen, Nov 2016, Compensation for network outages. Our estimate is therefore derived as follows, a line rental estimate of £18.99, multiplied by 5, divided by 30 days, this gives an estimate of £3.12 per day. This is higher than an estimate based on the average amount billed in the preceding three months prorated by the duration of the interruption.

<sup>10</sup> For Orange fixed voice service: Network failure not repaired within 48 hours: two months' subscription fee. Source: Cullen, Nov 2016, Compensation for network outages. Our estimate is therefore derived as follows, two months annual spend on voice (£75) converted to a daily rate on the basis of average days per loss of service (4 days).

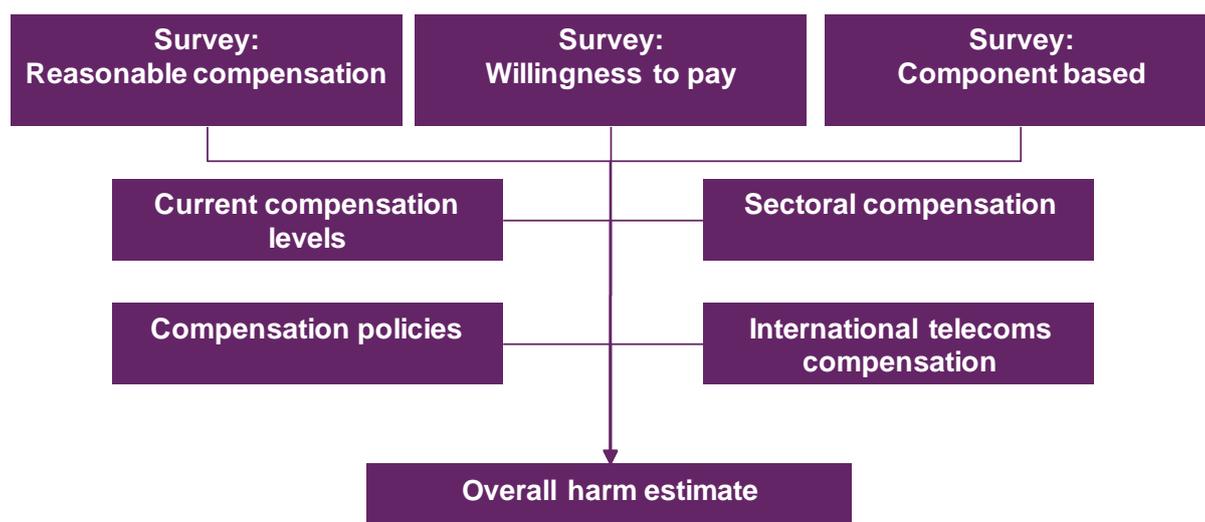
<sup>11</sup> A minimum payment of €5 per day. Adjusted by Ofcom at an exchange rate (€ to £) of 0.88 taken from [www.xe.com](http://www.xe.com) on 14 March 2017. Source: Cullen, Nov 2016, Compensation for network outages.

<sup>12</sup> Minimum compensation per 24 hours in case of a loss of service: for those with fixed monthly subscription fee: at least 1/30th of the monthly fee; for those with no fixed monthly subscription fee: at least €0.50. In both cases, the minimum compensation is €1 per disruption. Source: Cullen, Nov 2016, Compensation for network outages. Our estimate is therefore derived as the average daily spend on telecoms services (£453/365 = 1.24).

## Assessing evidence on harm

A4.58 Drawing on this evidence we have not taken a mechanistic approach to obtain a point estimate of harm. Rather we have used the survey based evidence as our starting point, but in recognition of the uncertainty in the estimates obtained, we have then considered other evidence (weighted as appropriate), to refine our estimate of the expected consumer harm, as illustrated in Figure A4.8 below. In doing so, we have rounded to the nearest £. This reflects a desire to avoid spurious accuracy and recognises the degree of uncertainty in the estimates.

**Figure A4.8: Summary of harm estimates**



## Harm from loss of service

- A4.59 Among survey evidence we would tend to place most weight on the level of compensation consumers felt would have been reasonable since these consumers have had direct experience of quality of service problems. The central estimate from this data is around £10 per day for loss of service. We note the willingness to pay estimates are somewhat lower than this value, however, in the present context we place lower weight on these estimates because respondents to these questions may not have experienced a loss of service (see paragraph A4.30 above).<sup>12</sup> A value of £10 per day is also comfortably within the range of the component based approach (with the mid-point of that range being only slightly higher at around £12).
- A4.60 Comparing against the other evidence, among consumers who do receive some compensation for loss of service, they currently receive on average around £4 per day. If providers were tailoring compensation payments to consumers actually claiming for loss of service, this could suggest that either the survey estimates are on the high side or that there are market features which allow providers to under-compensate compared to the harm consumers experience.<sup>13</sup>
- A4.61 Next we have looked at sectoral benchmarks and find that these are £30 to £70 per day (for gas and electricity respectively) and £10 per day (water). Scaling these by telecoms spend relative to utility spend reduces the value in energy, but slightly increases it in the case of water. In general, we might expect the loss of energy or water (particularly over a sustained period) to be more harmful than loss of communications services and therefore would expect our estimate of harm to be no higher than compensation in the utility sectors (particularly when scaling for relative spend).

<sup>12</sup> Specifically, these questions were asked to all respondents and therefore they will not all have experienced quality of service problems.

<sup>13</sup> These market features might include the fact that consumers may not switch provider even when quality of service falls short of expectations, perhaps because it is not clear to them that other providers would perform better or would offer higher levels of compensation in the event of service failings.

- A4.62 We have also reviewed evidence of the level of compensation awarded for loss of service in telecoms in other EU countries. The international comparators are generally lower than the UK utility comparators. However, they are largely based on compensation policies which comprise of mandating refunds of amounts paid, rather than accounting for harm above this level. We therefore place limited weight on these estimates.
- A4.63 Overall, we acknowledge that there is a range of uncertainty around estimating consumer harm. However, taking careful account of the above points, our provisional judgment is that £10 per day is a reasonable point estimate. This is in line with our survey based approaches of reasonable levels of compensation and the component based approach. It is below the level of compensation from other utilities which is intuitive given the greater value consumers might be expected to place on services such as electricity – noting in particular, that many communications services will not work without mains electricity.<sup>14</sup>
- A4.64 We recognise that any point estimate represents a value of harm estimated for a representative (or average) individual, with some consumers expected to incur higher or lower rates of harm depending on their personal circumstances and the nature of the incident.
- A4.65 We also recognise that this level of harm implies a constant daily rate. While it is possible that the daily rate of harm could increase over the duration of an incident (e.g. increasing frustration and/or a backlog of important communications, transactions or missed deadlines) for other consumers it may decrease (e.g. greater adaptability to the situation or a better workaround found). For present purposes, we have therefore made the simplifying assumption of a constant daily rate of harm.

### **Harm from delayed provisioning**

- A4.66 We have relatively little direct evidence on the degree of harm from delayed provisioning. However, we believe that it is likely to be highly correlated to the harm incurred from loss of service.
- A4.67 When consumers experience delayed provisions they may also experience a loss of service, i.e. where they do not have a pre-existing service. There may also be a degree of harm from a delay even when a pre-existing service is in place, however, this harm is likely to be much lower.
- A4.68 Where a delayed provision leads to loss of service due to the lack of, or disruption to, an existing service, then we consider that consumers are effectively harmed at the same level as if a loss of service was to occur under other circumstances. Therefore, we propose to value harm in these instances at the same rate as for loss of service. However, we do not expect all delayed provisions to lead to a loss of service. We therefore expect the average harm from a delayed provision to be equal to the harm from loss of service multiplied by the proportion of provisions that lead to a loss of service.

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<sup>14</sup> While traditional telephony (via copper line connections) can provide exchange-based power, many contemporary handsets (i.e. cordless handsets) require mains power. All broadband usage will require mains power (i.e. for routers and connected devices – for the latter at least once battery energy is consumed).

A4.69 Our consumer research asked respondents who had experienced a delayed provision about their situation at the time of the delayed provision. 33% of these respondents had no existing service. We consider these individuals to effectively have lost service as a result of the delayed provision (they were expecting a service on a given date, but it was not made available).<sup>15</sup> Additionally, we classify those who changed/upgraded service with an existing provider but had a temporary loss of service (12%) and those who switched provider but had a temporary loss of service (21%) to have experienced loss of service.<sup>16</sup> As such the total proportion of consumers we consider to have lost service due to a delayed provision and our consequent estimates for harm based on our loss of service estimate for harm are shown in Figure A4.9 below.

**Figure A4.9: Delayed provisioning estimate**

	Mean	95% confidence Interval (lower end)	95% confidence Interval (upper end)
Proportion of delayed provisions leading to loss of service	66%	57%	75%
Harm estimate (£)	6.60	5.68	7.52

*Note: Harm estimate is based on multiplying the harm from loss of service (£10 per day) by the proportion of delayed provisions that lead to a loss of service.*

*Base: All where service activation/upgrade was NOT in line with the time period given by their provider (excluding those who say service loss to own choice or DK at E2 which is why those codes then don't appear) (n=101)*

*Source: Ofcom calculations based on Jigsaw, Automatic Compensation, March 2017, slide 169: [https://www.ofcom.org.uk/data/assets/pdf\\_file/0026/98711/automatic-compensation-jigsaw-report.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0026/98711/automatic-compensation-jigsaw-report.pdf).*

A4.70 We compared the range of £5.70–£7.52 above to the few pieces of direct evidence that we have on delayed provisioning. We first observe that the estimates of willingness to pay for one day quicker provisioning are below this range, being around £1–£2. However, as explained in paragraph A4.31 above, the context to these questions is with regard to provisioning in general and not specifically about resolving delayed provisions. We therefore, place limited weight on this evidence.

A4.71 Evidence from current levels of compensation showed that amongst those experiencing delayed provisions, they received on average just over £2 per day. This is substantially below the range that we have estimated above based on consistency with the loss of service estimate of harm.

A4.72 We have not found any equivalent comparator to telecoms provisioning from UK utilities. In general, services such as electricity and water are available with a continuous supply and hence consumers who switch provider or move home do not typically have to wait for these services to be provided.

A4.73 Overall, these other comparators are below our range calculated in Figure A4.9 above, derived from the estimated harm from loss of service. While we tend to

<sup>15</sup> Jigsaw, *Automatic Compensation*, March 2017, slide 169: [https://www.ofcom.org.uk/data/assets/pdf\\_file/0026/98711/automatic-compensation-jigsaw-report.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0026/98711/automatic-compensation-jigsaw-report.pdf).

<sup>16</sup> The question asked respondents to categorise their own experience, but the duration of the temporary loss of service was not specified. Jigsaw, *Automatic Compensation*, March 2017, slide 169: [https://www.ofcom.org.uk/data/assets/pdf\\_file/0026/98711/automatic-compensation-jigsaw-report.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0026/98711/automatic-compensation-jigsaw-report.pdf).

place lower weight on these comparators, we have not disregarded them in our analysis, and therefore have proposed to use a point estimate of £6 per day, somewhat below the average from the loss of service consistent method (which yields £6.60 per day). We further propose to assume that this level of harm is constant per day.

## **Harm from missed appointments**

- A4.74 We first note that the ranges from our survey estimate are £47-£57 (reasonable compensation, with a mean of £52) and £24-£39 (component based, with a mean of £31) per incident. As explained in paragraph A4.24, the first of these was based on a question asked to all respondents, who therefore may not have experienced a missed appointment, and as such we place relatively low weight on this estimate. The latter of these was based on factual questions to survey respondents, however, the sample was relatively small <100 and contained several outliers that appeared inconsistent with an accurate understanding of the question. We propose to place more weight on the second range (component based calculation from those that suffered a missed appointment), but given the wide range (reflecting the small sample) from this approach, we are cautious in selecting a point estimate from it.
- A4.75 Turning to the other benchmarks, we see that current compensation payments by telecoms providers are around £24 in instances where compensation is awarded for a missed appointment.
- A4.76 As noted at paragraph A4.56 above, we also believe that the harm from a missed appointment itself will be similar regardless of the reason for the appointment since the harm derives from the value of lost consumer time. Therefore, in this particular instance we place more weight than for loss of service on the benchmarks from other sectors where compensation is awarded for missed appointments. In the electricity and water sectors, payments of £30 and £20 respectively are awarded for missed appointments. The electricity sector payment was increased to £30 in 2015 to reflect increased inflation from when it was previously set.<sup>17</sup> However, the water sector payment of £20 has not been updated since 2008. This leads us to place more weight on the £30 value from the electricity sector.
- A4.77 Taken in the round, our provisional judgment is that a reasonable point estimate of harm per missed appointment is £30.

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<sup>17</sup> The value is set out in The Electricity and Gas (Standards of Performance) (Suppliers) Regulations 2015 <http://www.legislation.gov.uk/uksi/2015/1544/note/made> . The methodology for uprating by inflation is explained in [Ofgem, 2014 Supplier Guaranteed and Overall Standards of Performance – statutory consultation and proposals, page 20](https://www.ofgem.gov.uk/sites/default/files/docs/2014/12/gosp_statutory_consultation_.pdf) [https://www.ofgem.gov.uk/sites/default/files/docs/2014/12/gosp\\_statutory\\_consultation\\_.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/2014/12/gosp_statutory_consultation_.pdf)

## Annex 5

# Market features and quality of service in relation to residential landline and broadband services

## Introduction

A5.1 As set out in Section 4, consumers are increasingly reliant on their fixed telecoms services, and suffer harm when things go wrong. We also discussed some particular features of the markets which in combination, are likely in our provisional assessment to be distorting the decision-making process and weakening the signals from landline and broadband consumers to providers regarding the value they place on quality of service. This may have the effect of undermining the incentives for providers to compete on (and deliver) service quality and/or weakens any negative financial impacts when they fail. As such, providers of residential landline and broadband services may not be delivering sufficient protection to consumers for failures in quality of service.

A5.2 This Annex provides background to some of the market features identified in Section 4 which may be contributing to this outcome, covering:

- Information asymmetries;
- Behavioural biases; and
- Switching problems.<sup>18</sup>

This Annex then discusses the supply side responses to the weakened signals from consumers and how wholesale market power may also be preventing adequate provision and investment in quality of service.

## Market features contributing to quality of service issues

### Information asymmetries

A5.3 For consumers to gain the benefits of competition they need to be able to exercise informed choice, and having access to information – in a format they are able to assess – is a key part of this.<sup>19</sup>

A5.4 An ‘information asymmetry’ occurs when the information held on one side of the market is superior to that held on the other side of the market, affecting market outcomes.

A5.5 We consider that consumers are likely to have a much lower understanding of the likely future quality of service performance and/or compensation policies than the providers themselves. This is because it is providers that determine quality of

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<sup>18</sup> We do not discuss difficulties claiming compensation further in this annex.

<sup>19</sup> Ofcom, *Initial conclusions from the Strategic Review of Digital Communications*, February 2016, paragraph 7.12, p81. [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0016/50416/dcr-statement.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0016/50416/dcr-statement.pdf)

service (both at the network level and the retail level) and set compensation policies. Consumers, in contrast, are reliant on their own past experience or that of friends or relatives – which may not be representative of the wider market. As such, in the absence of clear and readily available information to consumers, consumers' ability to access and assess information on the appropriate quality of service is constrained.<sup>20</sup>

- A5.6 We observed in the Digital Communications Review Statement that at present 'limited information on quality of service is publicly available.'<sup>21</sup> Where data on network performance is concerned, 'only Openreach publishes information about service quality on its fixed access network. Other providers do not. However, the Openreach information is limited to the key performance indicators set by Ofcom. These are not necessarily accessible or informative for consumers or businesses'.<sup>22</sup> We also noted that 'it appears that a large proportion of consumers' broadband service quality problems originate outside of Openreach's domain'.<sup>23</sup>
- A5.7 Retail providers do not appear to market to customers on the basis of quality of service features. This can be seen by considering some of the marketing material made available by providers on their websites. We reproduce some screen shots of the main pages of the largest residential providers' offers below (see Figures A5.1 to A5.4).
- A5.8 Our research of the main product offerings from the largest four providers (Sky, TalkTalk, Virgin Media and BT) suggests that they seem to advertise mainly on the basis of price and speed information. For example,
- Talk Talk's main headline focuses on its "low price, guaranteed". Below this is a list of what is included within the deal at a broad level ("totally unlimited data usage", 'powerful super router', 'online security features' etc).
  - In contrast, BT emphasises a commendation from u-switch about its popularity, then broadband speed, extra features (such as access to the BT Cloud, online security, the ability to add on BT Sport for free on BT TV, free access to BT Wi-Fi hot spots) and finally (at the bottom of the list) price.
  - The Sky adverts we looked at also do not refer to quality of service features, though we note Virgin Media's does refer to 'inclusive servicing / repairs' (as to which see further below).

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<sup>20</sup> Ofcom intends to publish an annual Service Quality Report in April, which will name the best and worst performers – among both fixed and mobile operators – on a range of quality measures. See Ofcom, *Initial conclusions from the Strategic Review of Digital Communications*, February 2016, paragraph 1.34, p7. [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0016/50416/dcr-statement.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0016/50416/dcr-statement.pdf).

<sup>21</sup> Ofcom, *Initial conclusions from the Strategic Review of Digital Communications*, February 2016, paragraph 7.27, p83. [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0016/50416/dcr-statement.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0016/50416/dcr-statement.pdf)

<sup>22</sup> Ofcom, *Initial conclusions from the Strategic Review of Digital Communications*, February 2016, paragraph 5.31, p54. [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0016/50416/dcr-statement.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0016/50416/dcr-statement.pdf)

<sup>23</sup> Ofcom, *Initial conclusions from the Strategic Review of Digital Communications*, February 2016, paragraph 5.35, p54. [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0016/50416/dcr-statement.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0016/50416/dcr-statement.pdf)

Figure A5.1: Sky screenshots

**Sky Broadband and Fibre**

Package	Price	Term	Includes	Buttons
Sky Broadband Unlimited	£18.99 a month	for 12 months	Includes line rental & Sky Talk	Add to basket, Find out more
Sky Fibre	£20 a month	for 18 months	Includes line rental & Sky Talk + £39 one off set-up fee	Add to basket, Find out more
Sky Fibre Unlimited	£30 a month	for 18 months	Includes line rental & Sky Talk + £39 one off set-up fee	Add to basket, Find out more
Sky Fibre Max	£35 a month	for 18 months	Includes line rental & Sky Talk + £39 one off set-up fee + free Sky Q Hub	Add to basket, Find out more

Performance Metric	Sky Broadband Unlimited	Sky Fibre	Sky Fibre Unlimited	Sky Fibre Max
Average UK download speeds	9Mb	34Mb	34Mb	60Mb
Download speeds (up to)	17Mb <sup>1</sup>	38Mb <sup>1</sup>	38Mb <sup>1</sup>	76Mb <sup>1</sup>
Monthly usage allowance	Unlimited	25GB	Unlimited	Unlimited

**Here's the legal bit**

**Sky Hub:** Inclusive for new Sky Broadband customers. Range may be affected by home environment. Speeds vary significantly with location.

**Offers**

**Sky Broadband**

**Sky Broadband in Sky Network Area:** Maximum home download speeds up to 17Mbps. Existing customer set-up free for Sky Broadband 12GB and Unlimited. Monthly usage caps: Sky Broadband 12GB - 12GB. Maximum upload speed: 12GB and Unlimited - 1.3Mbs.

**Sky Fibre, Sky Fibre Unlimited & Sky Fibre Max:** Availability subject to location and survey. £39 standard fibre activation fee. Maximum home download speeds: Sky Fibre and Sky Fibre Unlimited - up to 38Mb; Sky Fibre Max - up to 76Mb. Speeds vary by location. Sky Fibre monthly usage - 25GB.

**Sky WiFi:** For Sky Broadband Unlimited/Sky Fibre/Sky Fibre Unlimited & Sky Fibre Max customers. Available on 6 registered devices. Experience varies by location and number of users. App requires iOS 6.0 or later (Apple devices) or compatible Android devices running OS 2.2.2 and later or 4.x.

**30 day Broadband and Talk Satisfaction Guarantee:** Available within the first 30 days of all your services being activated. Refund applies to subscription charges only (not set-up charges or non-inclusive call charges) and is pro-rated. Statutory rights are not affected. Not applicable if you change your package.

**Lowest priced fibre:** Compared with widely available UK residential fibre and cable superfast broadband and line rental services (e.g. up to 38Mb and above) on an 18 month minimum term. Excludes offers and upfront line rental options. Features vary between providers. For verification go to [sky.com/lowestpricedfibre](http://sky.com/lowestpricedfibre).

**Sky Broadband general:** £9.95 router delivery charge applies. Speeds vary significantly by location. 12 or 18 month minimum subscriptions. New 18 month minimum subscriptions for Sky Fibre, Sky Fibre Max + Sky Talk + Line Rental. Separate contracts apply to Sky TV, Sky Broadband/Fibre and Sky Talk. No traffic management policy for Sky Broadband Unlimited, Sky Fibre and Sky Fibre Unlimited in the home. External factors such as internet congestion can affect speed. See [sky.com/shop/terms-conditions/broadband](http://sky.com/shop/terms-conditions/broadband) for more details and our Usage Policies. McAfee Free Trial: Sky Broadband 12GB - 3 months; Unlimited, Sky Fibre and Sky Fibre Unlimited & Sky Fibre Max - 12 months, then £3 pm unless you contact us to unsubscribe.

**Sky Hub:** Inclusive for new Sky Broadband customers. £69 for existing Sky Broadband customers. £9.95 router delivery charge applies. Range may be affected by home environment.

**Faster upload speeds:** Comparing upload speeds as stated by each company for Sky Fibre & Sky Fibre Unlimited (up to 9.5Mbps) with Virgin Media's up to 50Mb Fibre Broadband (up to 3Mbps).

**Fastest peak time speeds:** delivered by Sky, BT, Plusnet & EE (Nov 2014). Ofcom excludes Wi-Fi performance, which varies by device, home environment & ISP. Sky subscribes to Ofcom's Voluntary Code of Practice on broadband speeds.

**Navigation:** Sky Talk, Sky TV, Sky Q, General and further terms

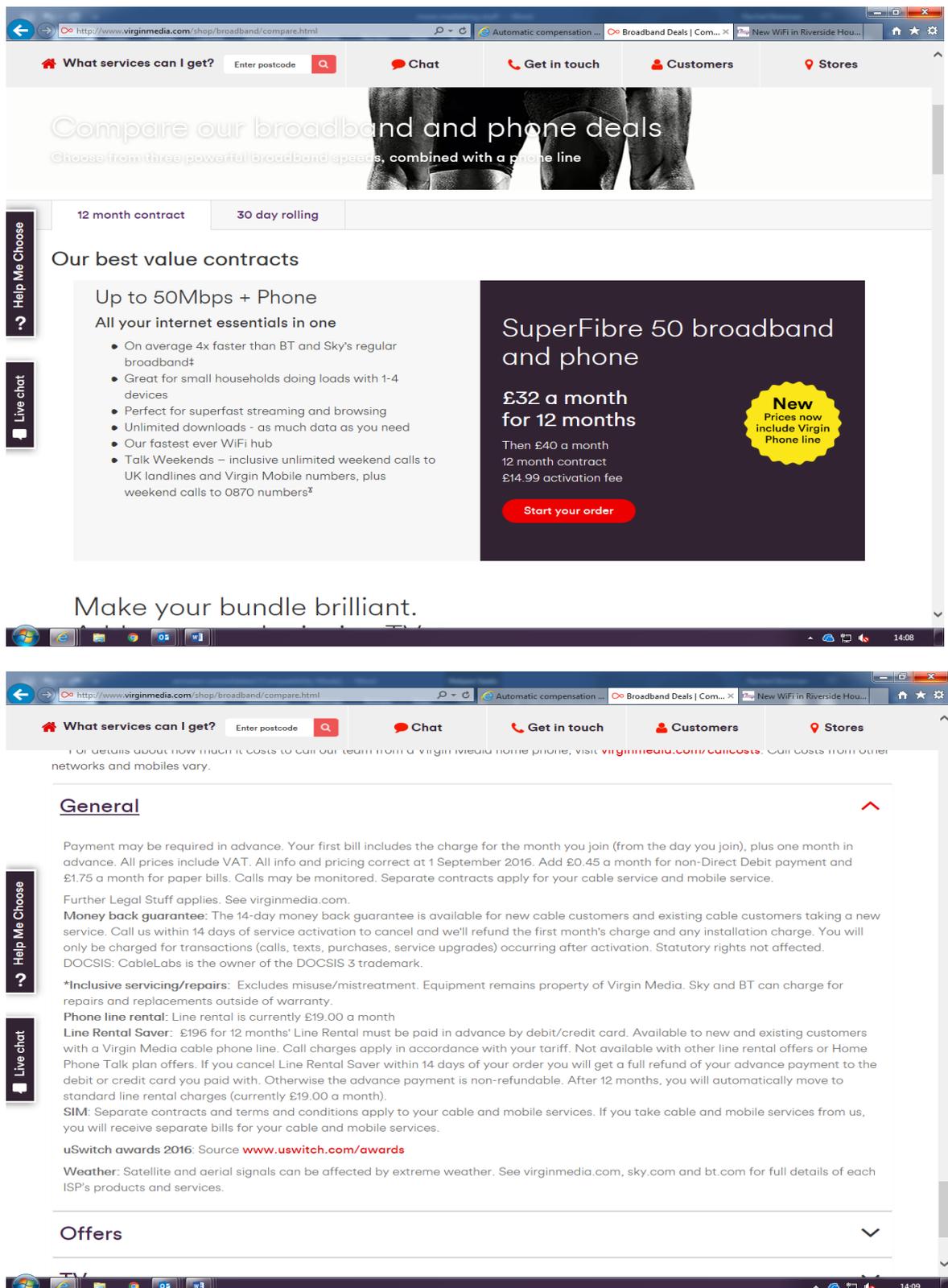
Source: Sky website, 20<sup>th</sup> March 2017. <http://www.sky.com/shop/broadband-talk/>

Figure A5.2: Talk Talk screenshots

The figure consists of two screenshots of the TalkTalk website. The top screenshot shows a promotional banner for broadband offers with a 5-day countdown timer. Below the banner, a headline reads "One low price, guaranteed until 2019", followed by a paragraph explaining the 24-month fixed price guarantee. A section titled "All our plans come with:" lists six benefits: unlimited internet usage, a powerful super router, 500MB of SIM data per month, online security features, a fixed price for the contract length, and access to the TalkTalk TV Store. A login prompt for existing customers is also visible. The bottom screenshot displays two side-by-side offer cards. The "Fast Broadband" card offers an exclusive price of £20 per month for 24 months, including line rental and no setup fee, with features like no usage caps and speeds up to 17Mb. The "Faster Fibre Broadband" card offers an exclusive price of £27 per month for 24 months, including line rental and no setup fee, with features like no usage caps, speeds up to 38Mb, and up to 4.5x faster performance than standard broadband. Both cards include "Get Started" and "Find out more" buttons. A "Chat now" button is present on the right side of both screenshots. The browser's address bar and Windows taskbar are visible at the top and bottom of each screenshot.

Source: TalkTalk website, 11th March 2017, <https://www.talktalk.co.uk/shop/>

Figure A5.3: Virgin Media screenshots



Source: Virgin Media website, 20<sup>th</sup> March 2017.

<http://www.virginmedia.com/shop/broadband/compare.html>

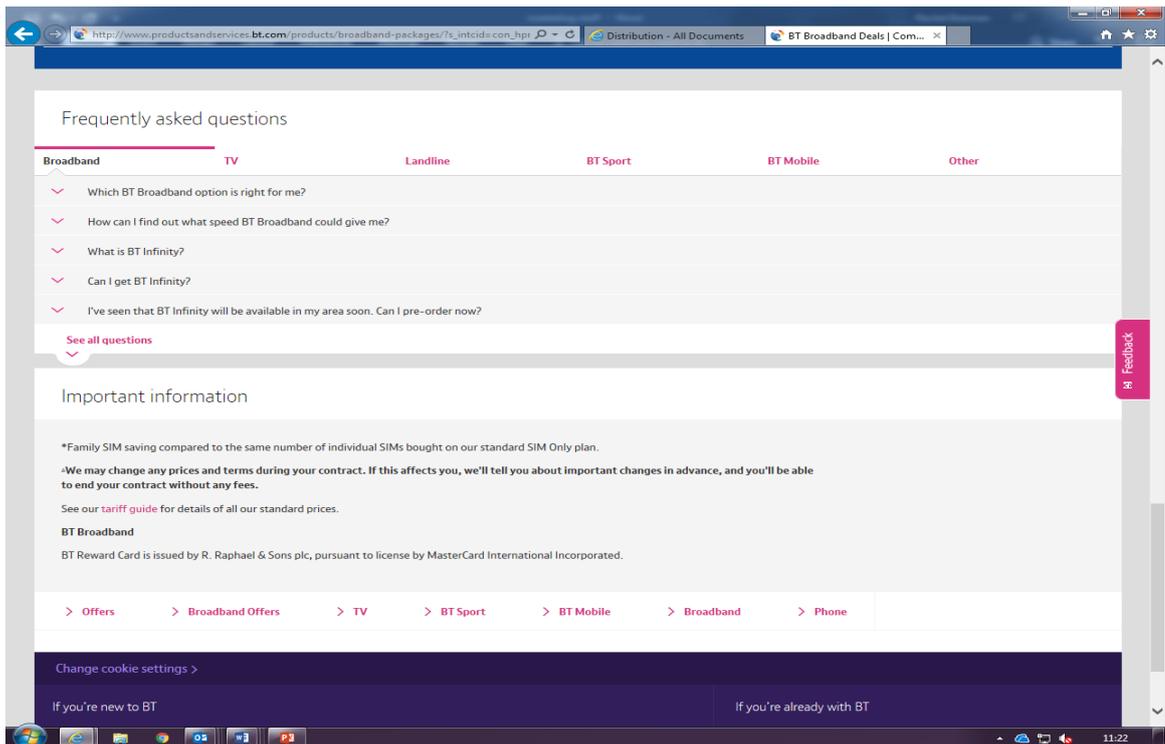
Figure A5.4: BT screenshots

Filter our broadband packages by:

- BT Broadband deals  
Great everyday broadband
- BT Infinity deals  
BT's fibre broadband
- Unlimited deals  
Unlimited usage every month

Our broadband packages	Broadband	Unlimited Broadband
Voted Most Popular Broadband Provider – uSwitch Broadband Awards 2017		
Hurry! Offers ending soon	26% new customer discount	Special Offer
Speed (up to)	17Mb	17Mb
Monthly Usage	12GB	Unlimited
BT Cloud Storage	5GB	100GB
Online Security	BT Virus Protect on 2 devices & BT Parental Controls	BT Virus Protect on 2 devices & BT Parental Controls
BT Sport	Add BT Sport for FREE on BT TV until 31 <sup>st</sup> July	Add BT Sport for FREE on BT TV until 31 <sup>st</sup> July
BT Hub	BT Home Hub 4	BT Home Hub 4

Our broadband packages	Broadband	Unlimited Broadband
Hurry! Offers ending soon	26% new customer discount	Special Offer
BT Hub	BT Home Hub 4	BT Home Hub 4
Inclusive Landline Calls	UK weekend calls	UK weekend calls
Call Protect	Prevent nuisance calls for FREE	Prevent nuisance calls for FREE
BT wi-fi hotspots	FREE access to 5 million BT wi-fi hotspots	FREE access to 5 million BT wi-fi hotspots
Online exclusive rewards	£150 BT Reward Card Hurry! Offer ends 6d 12h 37m 39s	£150 BT Reward Card Hurry! Offer ends 6d 12h 37m 39s
	<p><b>£24.99</b> <small>Δ/mth</small></p> <p>12 month contract includes BT Line rental Price after 12 months: £35.99</p> <p>Upfront <b>£9.99</b></p> <p>Select and personalise &gt;</p>	<p><del>£32.99</del> /mth</p> <p><b>NOW</b> <b>£24.99</b> <small>Δ/mth</small></p> <p>12 month contract includes BT Line rental Price after 12 months: £40.99</p> <p>Upfront <b>£9.99</b></p> <p>Select and personalise &gt;</p>



Source: BT website, 15<sup>th</sup> March 2017. <http://www.productsandservices.bt.com/products/broadband-packages/>

- A5.9 Even when it is offered, information on the quality of service which can be expected (or eligibility for compensation when things go wrong), appears limited on front/early pages and is relatively generic (for example, the second screen shot of Virgin Media’s website mentions ‘inclusive servicing and repairs’ but notes that this excludes ‘misuse or mistreatment’). Some further detail may be available if consumers scroll down, though often any (sometimes limited) extra detail is generally only accessible via click throughs to other pages or small print.<sup>24</sup> For instance, on Sky’s website, a consumer would need to highlight ‘Help and Support’ and then click on ‘Complaints’ to access the page which outlines how to make a complaint.
- A5.10 If consumers have relatively little information about future quality of service and can only find out how their provider performs after their purchase (i.e. when things go wrong), consumers may make sub-optimal choices. For example, there is a risk that they will experience poorer quality of service than they expected. Further, with limited information available about the quality of other providers’ services, consumers may consider that there is little to gain by switching, even if they experienced poor quality of service with their current provider (as discussed further below).

<sup>24</sup> Observations of front/early pages of websites and details of offers - in particular, broadband. Scroll downs and click throughs performed where it appeared quality of service information might be available. See websites (note, offers and website may have changed since the dates above).

## Behavioural biases

- A5.11 Behavioural economics ‘combines insights from psychology with traditional economic models to more accurately reflect decision making by consumers and other economic agents’.<sup>25</sup> It endeavours to improve insights from economic models by recognising that market participants exhibit systematic biases in the way that they view the world and economic markets. Behavioural biases may act to reduce consumers’ ability to trade off price and other service characteristics against future (uncertain) levels of quality.
- A5.12 We consider that a number of such biases may be operating in relation to fixed telecoms, leading consumers to underestimate the value of quality of service relative to other product features and distorting the way they assess the offers available and make purchase decisions.

### Consumers may underestimate the value of quality of service

- A5.13 There are a variety of different types of behaviour which may be affecting decision making in fixed telecoms services, whereby consumers underestimate the future value of quality of service at the point they make their purchase decision.
- A5.14 For example, so-called “present bias” may lead consumers to focus on the immediate benefits of a choice and pay insufficient attention to longer term costs and consequences.<sup>26</sup> In particular, consumers may focus on the immediate benefits of a deal (e.g. discounts on the list price of broadband), rather than future quality of service and the potential harm they might suffer if there is a delayed provision or loss of service.
- A5.15 This effect is illustrated in Figure A5.5 below, which shows the main factors that influenced choice for landline and broadband customers interviewed by Jigsaw and shows how price dominates decision making.<sup>27</sup> However, no single reliability/quality of service factor comes close to the importance that appears to be placed on price. ‘Reliability’ is only mentioned by 30% of broadband consumers and 24% of landline consumers, and other quality of service factors such as ‘responsiveness to faults’ and ‘speed of installation’ were mentioned very infrequently (i.e. 4% or less often). This is despite the significant consumer harm which can occur as a result of these issues (see Annex 4 for our estimate of harm from delayed repair and provision).

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<sup>25</sup> Office of Fair Trading, March 2010, *What does behavioural economics mean for competition policy?* Matthew Bennett, John Fingleton, Amelia Fletcher, Liz Hurley and David Ruck, p112.

[http://webarchive.nationalarchives.gov.uk/20140402142426/http://www.offt.gov.uk/shared\\_offt/economic\\_research/oft1224.pdf](http://webarchive.nationalarchives.gov.uk/20140402142426/http://www.offt.gov.uk/shared_offt/economic_research/oft1224.pdf)

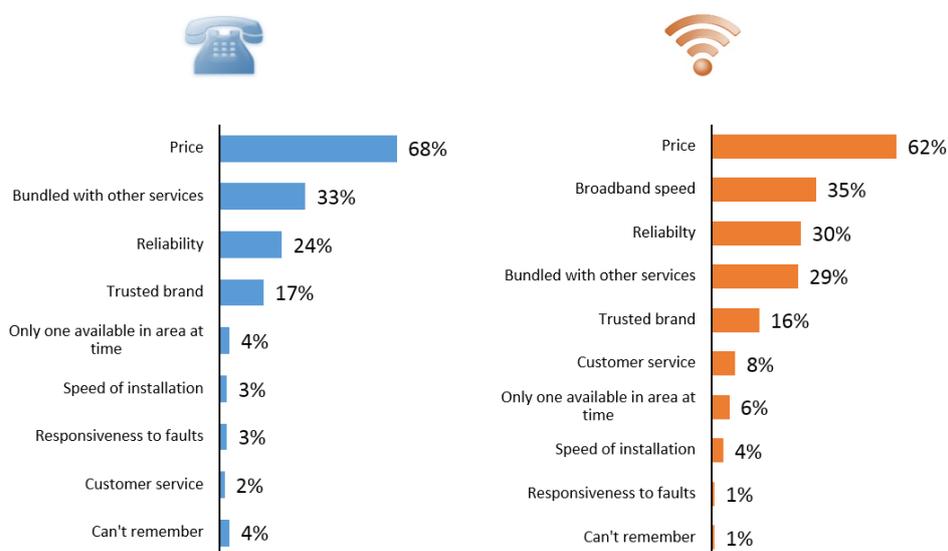
<sup>26</sup> Financial Conduct Authority, March 2016, *Appendix 3, Economics of Effective Regulation – Occasional Paper 13*, p46.

<https://www.fca.org.uk/publication/occasional-papers/occasional-paper-13.pdf>

<sup>27</sup> Jigsaw, *Automatic Compensation*, March 2017, slide 18, question C2a/b/c. Base: All Consumers that have a landline but no fixed broadband and changed their provider in the last 10 years n=96, all that have a fixed broadband connection and changed their provider in the last 10 years n=1479 [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0026/98711/automatic-compensation-jigsaw-report.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0026/98711/automatic-compensation-jigsaw-report.pdf).

**Figure A5.5: Price dominates the factors influencing choice of provider**

**Main factors that influenced choice of provider**



C2a/b/c. Thinking back to when you chose your (service), what were the main factors that influenced your choice of provider?  
 Base: All that have a landline but no fixed broadband and changed their provider in the last 10 years n=96, all that have a fixed broadband connection and changed their provider in the last 10 years n=1479.

Source: Jigsaw Research, *Automatic Compensation*, March 2017, slide 18:  
[https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0026/98711/automatic-compensation-jigsaw-report.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0026/98711/automatic-compensation-jigsaw-report.pdf).

A5.16 Further, Jigsaw reported that two fifths of those experiencing a loss of service claim it had a negative impact on their day to day activities, and 30% claimed it caused anxiety or stress.<sup>28</sup> When consumers were asked about the importance of their services, 66% of them told us that their household would ‘struggle to function’ without a working broadband service.<sup>29</sup> Indeed, service quality was the single biggest issue attracting comment during the Digital Communications Review.<sup>30</sup>

A5.17 Given this, we might expect quality of service to have a greater emphasis in consumers’ purchasing decision than seems to be currently observed, suggesting that present bias may be distorting decisions.

<sup>28</sup> Jigsaw, *Automatic Compensation*, March 2017, slide 38, question F7a. Base: All that experienced a loss of service, n=450 (reported n=348, not reported n=96\*), loss of landline or landline & broadband n=222, broadband only n=228, Base: loss of service during provisioning or upgrading n=63\*  
 \*CAUTION LOW BASE

[https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0026/98711/automatic-compensation-jigsaw-report.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0026/98711/automatic-compensation-jigsaw-report.pdf).

<sup>29</sup> Jigsaw, *Automatic Compensation*, March 2017, slide 16, question D1.  
[https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0026/98711/automatic-compensation-jigsaw-report.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0026/98711/automatic-compensation-jigsaw-report.pdf).

<sup>30</sup> Ofcom, *Initial conclusions from the Strategic Review of Digital Communications*, February 2016, paragraph 5.1, p46. [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0016/50416/dcr-statement.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0016/50416/dcr-statement.pdf)

- A5.18 Similarly, consumers may exhibit over confidence regarding their ability to predict future usage, and therefore disregard some relevant costs and charges.<sup>31</sup> They may be over-optimistic about the likelihood of service interruptions and/or their ability to deal with such interruptions.
- A5.19 This effect can be observed in part by comparing consumers' expectations of how they would cope with the loss of their telecoms services, to their actual experiences of lost telecoms services.
- A5.20 Jigsaw asked all survey respondents a hypothetical question as to how much they relied on their telecoms services.<sup>32</sup> Respondents believed that they would be able to manage for significant amounts of time without their landline telephony service (around 45 days on average<sup>33</sup>) and much less time for their internet service (around 6 days on average).
- A5.21 Jigsaw also asked those who had experienced a loss of service, how satisfied they were with the length of time that it took their provider to resolve their loss of service (after first notifying their supplier).<sup>34</sup> These results suggest that respondents became increasingly dissatisfied the longer the period between reporting the loss and it being repaired. Moreover, the level of dissatisfaction jumped significantly if consumers had to wait more than three days for restoration of their service.<sup>35</sup> This timescale is less than the hypothetical amounts of time that respondents believed they would be able to manage without their service. This may reflect a disconnect between their expectations of their ability to cope without fixed telecommunications services and the actual experience of being without such services.
- A5.22 This apparent disconnect may distort consumer decision making at the point of purchase. In other words, their purchase decision may not reflect the true value they place on quality of service.

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<sup>31</sup> Financial Conduct Authority, March 2016, *Appendix 3, Economics for Effective Regulation, Occasional Paper 13*, p46. <https://www.fca.org.uk/publication/occasional-papers/occasional-paper-13.pdf>

<sup>32</sup> Jigsaw, *Automatic Compensation*, March 2017, slide 16, question D1: Thinking again about your [landline / broadband] service, how much does your household rely on each of these? Base: All Consumers using landline/broadband n=1941/1794. [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0026/98711/automatic-compensation-jigsaw-report.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0026/98711/automatic-compensation-jigsaw-report.pdf).

<sup>33</sup> The 'average' data here was calculated by Jigsaw as the mean. Jigsaw, *Automatic Compensation*, March 2017, slide 16, question D1: Thinking again about your [landline / broadband] service, how much does your household rely on each of these? Base: All Consumers using landline/broadband n=1941/1794. [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0026/98711/automatic-compensation-jigsaw-report.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0026/98711/automatic-compensation-jigsaw-report.pdf).

<sup>34</sup> Jigsaw, *Automatic Compensation*, March 2017, slide 36, question F6: Overall, how satisfied or dissatisfied were you with the length of time it took your provider to resolve your loss of service for your (service), using the following scale? Base: All with a complete loss of service n=450. [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0026/98711/automatic-compensation-jigsaw-report.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0026/98711/automatic-compensation-jigsaw-report.pdf)

<sup>35</sup> Of respondents who had to wait between one to three days, 25% were fairly or very dissatisfied. However, after more than 3 days, 79% of the respondents were either fairly or very dissatisfied. Jigsaw, *Automatic Compensation*, March 2017, slide 36, question F5 and F6. BASE: all who reported n=348, all where service restored within 1 day n=105, 1-3 days n=136, 2 days or more n=162, more than 3 days n=83\* \*CAUTION LOW BASE. [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0026/98711/automatic-compensation-jigsaw-report.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0026/98711/automatic-compensation-jigsaw-report.pdf)

## Consumers may have a limited ability to assess (or act on) the information available

- A5.23 In the Digital Communications Review we noted that communications ‘products can be more diverse and complex, with more options for consumers, than many other networked services (e.g., energy, water)’.<sup>36</sup> Barriers to understanding and comparing products can lead to consumers being unable to assess information in order to choose the product or service that suits their needs best.<sup>37</sup> These barriers can result in buyer behaviours such as: ‘rules of thumb’ to compare complex products; errors in predicting future use of products; only noticing particular features of products, or being susceptible to “framing”.<sup>38</sup>
- A5.24 We consider that similar behaviours are likely to be present in relation to residential landline and broadband services. For instance, when choosing services such as broadband, consumers may use ‘rules of thumb’, concentrating on a few indicators such as price and headline speed and paying less attention to others, such as the chance of future service failure. This seems corroborated, to a large extent, by Jigsaw’s research (see Figure A5.5 above) and the headline advertising of the major providers (see Figures A5.1-A5.4 above).
- A5.25 Another indication that consumers are using rules of thumb, and typically focusing on specific features of a service, is Ofcom’s finding in relation to dual-play (i.e. landline and broadband sold together) and triple-play services (as for dual-play but with bundled TV services). In these cases, providers ‘appear to have concluded that they can achieve higher net customer additions by offering lower broadband prices, rather than keeping line rental prices low’.<sup>39</sup> Absent behavioural biases (such as “framing”), the component charges should be less relevant to a purchase decision than the total bundle or package price. However, it would appear that consumers react to these price frames differently.
- A5.26 It is such behaviour (on the part of providers responding to potential consumer biases) that prompted our joint research with the ASA into fixed broadband pricing.<sup>40</sup> Following that research the ASA concluded that in order to remain compliant with advertising rules, future advertisements should not exclude the line rental charge from the package price and advertisements should show all-inclusive upfront and ongoing monthly charges.<sup>41</sup> While this example focusses on effectively price-framing – and not quality of service issues – it does illustrate how certain

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<sup>36</sup> Ofcom, *Initial conclusions from the Strategic Review of Digital Communications*, February 2016 paragraph 7.33, p84. [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0016/50416/dcr-statement.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0016/50416/dcr-statement.pdf)

<sup>37</sup> Financial Conduct Authority, March 2016, *Appendix 3, Economics for Effective Regulation, Occasional Paper 13*, p45. <https://www.fca.org.uk/publication/occasional-papers/occasional-paper-13.pdf>

<sup>38</sup> Framing refers to the situation of providers presenting a price offer in a particular context that affects consumers’ assessment of the value of the offer. See for example, OFT, *December 2010, Advertising of prices, paragraph 1.1, p4*. [http://webarchive.nationalarchives.gov.uk/20140402142426/http://www.of.gov.uk/shared\\_of/market-studies/AoP/OFT1291.pdf](http://webarchive.nationalarchives.gov.uk/20140402142426/http://www.of.gov.uk/shared_of/market-studies/AoP/OFT1291.pdf)

<sup>39</sup> Ofcom, *The Consumer Experience, 2015: Research Annex*, p7. [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0023/38543/annex.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0023/38543/annex.pdf)

<sup>40</sup> ASA, 21 Jan 2016, briefing note on research on price claims in broadband advertising, Public Affairs paper.

<https://www.asa.org.uk/resource/ASA-briefing-note-on-research-on-price-claims-in-broadband-advertising.html>

<sup>41</sup> ASA News, 4 May 2016, *Tougher approach to broadband price claims in ads*, <https://www.asa.org.uk/news/tougher-approach-to-broadband-price-claims-in-ads.html>

components of a tariff/service can become the focal point for advertising/promotional material and how this is rational for providers if consumers are predisposed to focus on a limited amount of information.

- A5.27 If consumers are unable to effectively assess the information which is important to their future use and enjoyment of a service, this is likely to distort their decision making at the point of purchase. In other words, their purchase decisions may not reflect the true value they place on quality of service.

### Switching barriers

- A5.28 In theory, a rational consumer will weigh up the full benefits and costs of switching – trading off any switching costs against the future net benefits of services available from an alternative provider. If switching is difficult, or perceived to be difficult, this will reduce the net benefits of switching and so the likelihood of switching occurring in the first place.<sup>42</sup>
- A5.29 After experiencing poor quality of service, we might expect a consumer to consider switching provider if a better alternative was available. The risk that consumers would switch, so reducing profits, should give an incentive to providers in relation to quality of service. However, if there are barriers and costs associated with switching (perceived or actual), this would limit the financial impact of poor quality of service on providers. It may also limit the extent to which consumers purchase the service that offers the most suitable level of quality of service for them, even where available. As such, the signals from consumers of their value of quality of service would be weaker.
- A5.30 In the Digital Communications Review<sup>43</sup> we noted that switching ‘in our sectors is becoming more complex: contracts are lengthening, bundled services are becoming the norm and communications providers are putting greater focus on customer retention activity.’ Several respondents<sup>44</sup> to the Digital Communications Review consultation ‘pointed towards low levels of switching as an indicator that more needs to be done in this area’.<sup>45</sup>
- A5.31 Jigsaw asked consumers about their attitudes to their supplier after experiencing a loss of service (see Figure A5.6 below<sup>46</sup>). Jigsaw found that only 8% of consumers who suffered a loss of service said that they had switched supplier as a result (41% said that they accepted that loss of service occurs sometimes). Other consumers (in total 20% of respondents) said that they were: still actively looking to change supplier, or had looked into and rejected switching or had thought about switching but not looked into it.<sup>47</sup> The fact that switching had not actually occurred may imply

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<sup>42</sup> Such a decision could also be affected by behavioural biases discussed above.

<sup>43</sup> Ofcom, *Initial conclusions from the Strategic Review of Digital Communications*, February 2016, paragraph 7.38, p85. [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0016/50416/dcr-statement.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0016/50416/dcr-statement.pdf)

<sup>44</sup> BT, TalkTalk and the Communications Consumer Panel

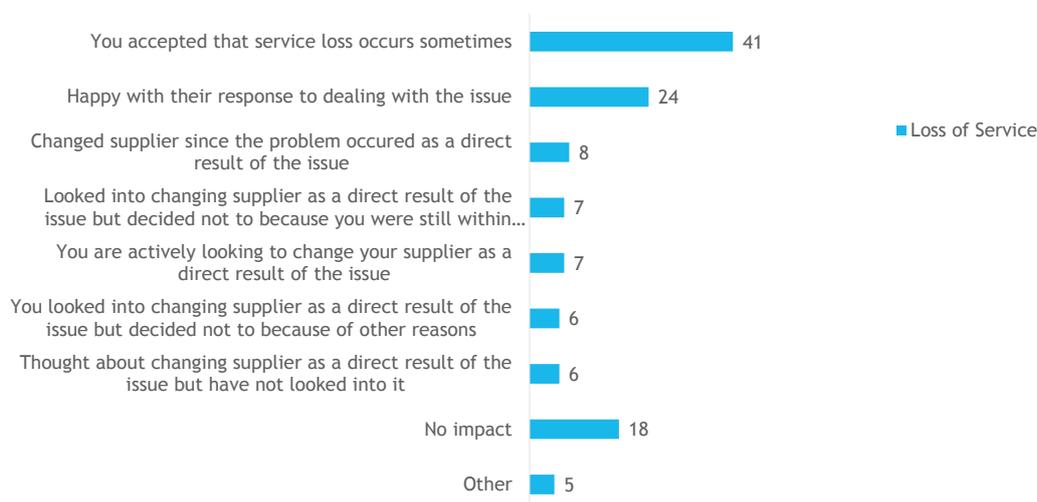
<sup>45</sup> Ofcom, *Initial conclusions from the Strategic Review of Digital Communications*, February 2016, paragraph 7.39, p85. [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0016/50416/dcr-statement.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0016/50416/dcr-statement.pdf)

<sup>46</sup> Derived from Jigsaw, *Automatic Compensation*, March 2017, slide 50. Question H1m. [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0026/98711/automatic-compensation-jigsaw-report.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0026/98711/automatic-compensation-jigsaw-report.pdf)

<sup>47</sup> This covers those who: looked into changing supplier as a direct result of the issue but didn’t as they were still in contract; were actively looking to change supplier as a direct result of the issue; looked into changing supplier as a direct result of the issue but didn’t for other reasons; and thought

that the cost benefit trade-off was proving unfavourable. The fact that only a proportion of consumers experience a loss of service in any year, and of these only a subset switched, emphasises our concern that the financial consequences from providing low quality of service by providers may be limited.

**Figure A5.6: Experience of Loss of Service – Impact on attitudes to supplier relationship**



*Question H1m: Taking everything into account that happened when you lost service, the processes you went through and the time taken to get your service restored, has this had any of the following effects on your attitudes towards your relationship with the supplier?*

*Base: All who experienced loss of service n=450*

*Source: Jigsaw Research, March 2017, Automatic Compensation, slide 50*

## Supply side features may discourage competition and investment in quality of service

A5.32 We consider that there are supply side features at both the retail level and the wholesale level which may affect quality of service. We address each of these in turn below.

### Retail level supply side features

A5.33 We would expect retail providers will respond to market conditions and consumer behaviour in order to maximise profits. For instance, if quality of service plays a limited role in customer acquisition decisions and/or churn (i.e. switching), then incentives on providers to invest to prevent such quality of service problems arising, or to deal quickly or adequately with quality of service problems, are also likely to be low. In other words, if providers are not losing customers and so profits, then they may have little incentive to invest to rectify the problem.

A5.34 Similarly, in this situation, retail providers may have limited incentives to offer compensation to consumers. A priori, a provider will not want to raise its costs further by offering compensation, if this does not result in any benefits for the provider (such as through greater revenue or customer loyalty). This is reflected in

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about changing supplier as a direct result of the issue but didn't look into it. This number cannot be calculated by adding up categories from Figure A5.6 due to respondents giving multiple answers. The net figure for these groups (removing overlaps) was provided separately by Jigsaw.

the compensation policies of many providers which adopt a reactive approach, whereby consumers typically have to specifically request compensation (see Figure 3 section 4). In addition, as set out earlier in this annex, providers appear to primarily compete on price and a sub-set of features such as headline broadband speed.

### Wholesale level supply side features

- A5.35 Wholesale market power may also be preventing adequate provision and investment in quality of service. Whilst a limited number of telecoms providers, such as Virgin Media, compete end to end with BT, many providers purchase wholesale inputs from BT (e.g. from Openreach) to deliver their services to end customers. As such, many (but not all) aspects of the quality of service delivered by these providers to their consumers, can be critically dependent on the nature of the service delivered to them by BT. Given BT's Significant Market Power (SMP) in key wholesale markets, its quality of service incentives could be distorted.
- A5.36 Our current (and proposed) wholesale regulation seeks to address this issue. At the time of the 2014 Fixed Access Market Review, quality of service on the Openreach copper network had shown significant signs of deterioration. To address this we introduced minimum standards of service for Openreach copper services which required Openreach to deliver rising standards of service over the period of the control in relation to certain parameters such as fault repair.<sup>48</sup> These minimum standards of service were included in BT's SMP conditions and were backed with a threat of a fine for non-compliance.
- A5.37 Quality of service in both the Wholesale Fixed Analogue Exchange Lines market and Wholesale Local Access market are also being reviewed as part of current wholesale market reviews.
- A5.38 Wholesale regulation where there is SMP should address some of the shortfalls in service quality experienced at the wholesale level, however, many of the market features described earlier in this annex are retail market features which mean that consumers are likely to remain exposed to quality of service problems even where there is effective wholesale regulation.

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<sup>48</sup> Ofcom, *Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN 30: Volume 1, Statement*, June 2014, section 9.  
[https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0032/78863/volume1.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0032/78863/volume1.pdf)

## Annex 6

# Estimates of quality of service incidents

- A6.1 In this Annex we describe our approach to estimating the annual number of quality of service incidents and compensation pay-outs for (i) customers of residential landline and fixed broadband services and (ii) customers of business landline and fixed broadband services targeted at SMEs.<sup>49</sup> For both, we have collected data from a range of providers and have combined these to reach our estimate for the total number of incidents across each segment.
- A6.2 We have followed broadly similar approaches to estimate the incidents for both the residential and SME segments, which we describe below. However, where differences arise, these are also explained below.
- A6.3 We use the estimates calculated for residential services in this annex throughout our analysis and particularly in sections 5-9 of the consultation. They inform our view of the volume of quality of service issues and in turn the overall assessment of our proposals.
- A6.4 We use the estimates in this annex calculated for business landline and fixed broadband services targeted at SMEs in section 11, to inform our view of the problems experienced by SMEs and our proposed intervention.

## Providers covered in our estimates

- A6.5 We sent formal information requests about the level of quality of service incidents and compensation pay-outs to a range of providers. For residential services, we sent the requests to the following eight largest providers of voice and broadband services in the UK:
- BT;
  - EE;<sup>50</sup>
  - KCOM;
  - Plusnet;
  - Post Office;
  - Sky;
  - TalkTalk; and

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<sup>49</sup> Our estimates of the incidence of quality of service problems are based on current levels. We acknowledge that the incidence may vary in the future due to external factors and, potentially, in response to other Ofcom policy decisions. For example, we have consulted on proposals for reform of the process for the cross-platform switching of services and we expect to consult on Openreach's service quality as part of the Wholesale Local Access (WLA) market review shortly. Should any future Ofcom policy decisions be implemented that provide stronger incentives for providers to improve quality of service, there could be reductions in the incidence of quality of service problems.

<sup>50</sup> [3<].

- Virgin Media.

A6.6 For SMEs, we sent requests to the following providers:

- BT;
- Chess;
- Daisy;
- EE;
- KCOM;
- Mi Telecom;
- O2;
- Plusnet;
- Rainbow;
- Spitfire;
- TalkTalk;
- Three;
- Utility Warehouse;
- Verastar;
- Virgin Media;
- Vodafone;
- XLN; and
- Zen.

A6.7 We asked largely the same questions to each provider. However, due to difference in providers' information systems and processes not all providers were able to give us complete data for each question; or were able to provide data that would be comparable with data from other providers. Therefore, where data for one or more provider was incomplete we have assumed that these providers have the average industry rate for that variable (based on the data received from those providers who provided us with complete information), applied to their total number of subscribers.

A6.8 Further we recognise that the above providers do not represent the entire residential or SME segments respectively, and there are a number of other smaller providers (both on the Openreach network and also as smaller alternative networks). We have therefore scaled up the aggregate figures we calculate from the above where appropriate as follows:

- For the residential segment, we have scaled up to a level based on total number of active lines in the UK (25.6m).<sup>51</sup>
- For the SME segment, we have scaled up to an industry level using subscriber numbers obtained from our survey.<sup>52</sup>

## Time period

A6.9 We asked for data to be provided on a quarterly basis over the period Q3 2014 to Q2 2016. We have used all the data from across the period in calculating our totals and then annualised these values. Where providers were unable to cover the whole period, we have calculated the average based on the quarterly data they did provide. Our final totals represent an annual average across the period Q3 2014 to Q2 2016.

## Data collected

A6.10 For the residential segment, we asked for data reflecting all customers on any residential landline and/or fixed broadband contract or package.

A6.11 For the SME segment, we initially asked for data reflecting all microbusiness customers on any business landline and/or broadband service targeted at SME customers.<sup>53</sup> However, not all providers were able to provide data specifically for microbusiness customers, and instead responded with data covering their whole SME customer base. For consistency across providers, we scaled up any provider data for microbusinesses to represent all SMEs, based on the proportion of SMEs in the UK private sector that microbusinesses reflect.<sup>54</sup>

A6.12 For both residential and SME estimates we asked providers to exclude customer-caused events from their totals (recognising that customer caused incidents would not be entitled to automatic compensation). While most providers responded accordingly, some providers informed us they were unable to do this for all metrics and could only provide data containing all incidents of loss of service.

A6.13 Given we do not have further information regarding customer caused events for specific providers, we have not considered it appropriate to make any adjustment ourselves for this. Therefore, we recognise that our estimates may over-estimate the total incidence of non-customer caused events. However, in the circumstances a more accurate approach was not possible and we consider that our estimates have been made using an approach that is reasonable in the circumstances reflecting the best information available at this time.

A6.14 We asked providers for data on the categories set out below (A6.15–A6.18).

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<sup>51</sup> Ofcom, *Communications Market Report*, 2016, p7:

[https://www.ofcom.org.uk/data/assets/pdf\\_file/0024/26826/cmr\\_uk\\_2016.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0024/26826/cmr_uk_2016.pdf)

<sup>52</sup> Jigsaw, *Automatic compensation*, March 2017:

[https://www.ofcom.org.uk/data/assets/pdf\\_file/0026/98711/automatic-compensation-jigsaw-report.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0026/98711/automatic-compensation-jigsaw-report.pdf)

<sup>53</sup> By microbusinesses we mean businesses with 10 or less workers

<sup>54</sup> Microbusinesses are estimated to account for approximately 96% of SMEs. Department for Business, Energy and Industrial Strategy: *Business Population (2016)*, Page 3, Table A.

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/559219/bpe\\_2016\\_statistical\\_release.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/559219/bpe_2016_statistical_release.pdf)

A6.15 Loss of service for landlines (and equivalent questions for broadband):

- Total number of customers who experienced loss of service on their landline.
- For the total number of customers who experienced loss of their landline service in the quarter, how many were restored in 'x' number of calendar days following the day the issue was identified (e.g. reported by the customer), with 'x' for each value between 1 and 27 days.
- The mean average number of calendar days taken to restore the landline service for those which took 28 days or more.

A6.16 Provisioning for landlines (and equivalent questions for broadband):

- Total number of landlines provided within the installation/provision date agreed with the customer as notified to them in writing.
- Total number of landlines provided 'x' calendar days beyond the installation/provision date agreed with the customer as notified to them in writing, with 'x' for each value between 1 and 27 days.
- The mean average number of days for those landlines provided 28 days or more beyond the installation/provision date agreed with the customer.

A6.17 Missed appointments (Openreach-related questions only asked to Openreach-based providers):

- Total number of Openreach appointments booked.
- Total number of missed appointments by Openreach.
- Total number of own workforce appointments booked.
- Total number of missed appointments by your own workforce.

A6.18 Compensation:

- Total number of customers who received any form of compensation for each of the following issues: loss of service, delayed provisioning and missed appointments.
- Total number of customers who received monetary compensation for each of the following issues: loss of service, delayed provisioning and missed appointments.
- Total value of the monetary compensation paid for each of the following issues: loss of service, delayed provisioning and missed appointments.

A6.19 Some providers were able to provide the above data for each of the individual quality of service issues separately, while others provided aggregate figures. Where providers reported aggregate compensation, we have allocated this across each of the types of quality of service problem in line with that providers' proportions of each type of quality of service problem.

## Relationship between landline and broadband data

- A6.20 We have sought to estimate the total volume of incidents that would correspond to our proposed mechanism for compensation i.e. a loss of either landline only, broadband only or landline and broadband simultaneously are each counted as a single incident.
- A6.21 We asked questions related to loss of service and provisioning separately for landline and broadband services.<sup>55</sup> There is some interrelationship between landline and broadband services. For example, the loss of a voice service typically leads to the loss of the broadband service as well, however the reverse is not necessarily true.
- A6.22 Providers' responses to our questions varied depending on their internal systems and reporting processes. Some providers told us that their reporting systems distinguished issues into separate landline and broadband categories only and that they did not record any incidents as affecting both landline and broadband. The aggregate estimates from these providers should therefore correspond to a total of landline and/or broadband incidents.
- A6.23 Other providers told us that they treat the simultaneous loss of landline and broadband as a landline fault. Therefore, for these providers their landline incidents should represent both landline only and simultaneous landline and broadband incidents, whereas their broadband category should represent broadband only incidents.
- A6.24 Other providers indicated that simultaneous loss of landline and broadband might be recorded in each category of landline and broadband, but were unable to split this out further. Where this applies, the aggregate totals may incorporate a degree of double counting of incidents. We recognise that such double counting could lead to our estimates of incidents being an over-estimate. Nevertheless, we consider that our estimates have been made using an approach that is reasonable in the circumstances, reflecting the best information available at this time, and given the difficulties for providers in categorising their incident data in a manner for which their systems and processes are not designed.
- A6.25 Overall, where we present data on loss of service or delayed provisioning for landlines, and separately for broadband, each may reflect a loss of service or provision of both services simultaneously as well as a single-service issue. However, the combination of the separate landline and broadband figures presented should represent a more reliable estimate of the total incidence of loss of service or delayed provisioning (across the incidents as a whole).

## Outputs

- A6.26 We summarise our estimates of the annual incidence and compensation payouts for the industry as a whole in Figure A6.1 (residential) and Figure A6.2 (SMEs) below. The Figures imply that across loss of service, delayed provisioning and missed appointments only around 15% of incidents experienced by residential consumers and 2% of incidents experienced by SMEs are currently compensated.

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<sup>55</sup> In our SME information request we also asked providers to separately split out simultaneous loss of voice and/or broadband.

This may not translate directly to equivalent percentages of consumers, since some consumers may experience more than one incident per year.

**Figure A6.1: Estimated residential incidents per year**

	Loss of Service	Delayed provisioning	Missed Appointments
Compensation pay-outs (m)	0.870	0.163	0.034
Number of problems (m)	5.695	1.277	0.248
Number of problems per line	0.222	0.050	0.010

Source: Ofcom calculations based on provider responses to August 2016 fixed s135 requests BT, EE, KCOM, Plusnet, TalkTalk, Sky, Post Office and Virgin Media.

**Figure A6.2: Estimated SME incidents per year**

	Loss of Service	Delayed provisioning	Missed Appointments
Compensation pay-outs (m)	0.013	0.002	0.001
Number of problems (m)	0.655	0.114	0.010
Number of problems per line	0.086	0.015	0.001

Source: Ofcom calculations based on provider responses to January 2017 fixed s135 requests BT, Chess, EE, KCOM, Plusnet, Rainbow, TalkTalk, Three, Utility Warehouse, Verastar, Vodafone, XLN, and Zen.

## Annex 7

# Pass-through

- A7.1 The extent of pass-through is relevant for determining how different parties share the costs arising from an automatic compensation regime.
- A7.2 Below we first discuss which market features are, in theory, likely to affect the extent of pass-through. We then provide a brief overview of some empirical findings. Finally, we consider the extent to which the costs of introducing an automatic compensation regime are likely to be passed on to residential consumers by fixed telecoms providers.

## Market features likely to affect the extent of cost pass-through to prices

- A7.3 Whilst economic theory does not give a definitive answer on the extent to which rises in costs lead to higher prices, it suggests that the following features are relevant:
- the nature of the rise in costs (whether it is a rise in fixed or marginal costs);
  - the shape of the demand and supply curves;
  - the level of competition;
  - the extent to which cost rises vary between firms; and
  - the time period under consideration.

### The nature of the rise in costs

- A7.4 In theory a profit maximising firm will produce up to the point where marginal costs equal marginal revenues. Only if marginal costs rise, would this affect the profit maximising output level and potentially lead to higher prices. Therefore, when assessing the prospect of cost pass-through, the focus should be first on whether marginal costs rise, rather than fixed costs.<sup>56</sup>
- A7.5 That said, in practice firms may not always set prices in the manner predicted by economic theory. For example, if a firm sets its price to earn a target return on its fixed costs, then changes in fixed costs would be relevant to the extent of pass-through.<sup>57</sup>

### The shape of the demand and supply curves

- A7.6 In a competitive market the extent to which an industry wide cost increase will be passed through to prices depends on the elasticity of demand relative to the

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<sup>56</sup> Whether or not costs are fixed also depends on the timeframe of the analysis, since more costs become variable in the long-run.

<sup>57</sup> See for example RBB Economics, February 2014, *Cost pass-through: theory, measurement and potential policy implications, A Report prepared for the Office of Fair Trading*, p30.  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/320912/Cost\\_Pass-Through\\_Report.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/320912/Cost_Pass-Through_Report.pdf)

elasticity of supply (the latter being the sum of the (marginal) cost curves of all firms in the industry). Elasticity of demand measures the sensitivity of demand to changes in price. If demand falls by a greater percentage than the rise in price, demand is 'elastic'; if demand falls by a lesser percentage it is 'inelastic'. Similarly, elasticity of supply refers to the sensitivity of firms' output to price changes.

- A7.7 Everything else being equal, in competitive markets, the more elastic demand is relative to supply, the smaller the pass-through.<sup>58</sup> If demand declines as price rises (i.e. there is a downward sloping demand curve) and there is an upward sloping supply curve then pass-through would be between 0% and 100%.
- No (i.e. 0%) pass-through would occur if supply (i.e. capacity) is fixed at a particular level of output.<sup>59</sup>
  - Full (i.e. 100%) pass-through would occur if firms face a constant (marginal) cost of supply.<sup>60</sup>
  - More than 100% pass-through may occur if firms face declining marginal costs of supply.

### The level of competition

- A7.8 When markets are not fully competitive, firms enjoy a degree of market power and the level of pass-through depends on the interplay between a number of factors (such as cost structures, the behaviour of firms and the shape of the demand curve). For example:
- Consider the scenario of constant marginal costs and linear demand. In a perfectly competitive market, there would be full (100%) pass-through of industry-level (marginal) cost increases. In contrast, it can be shown that, under the same demand and cost assumptions, a monopolist would pass-through only 50% of the increase in (marginal) costs.<sup>61</sup>
  - However, with non-linear demand curves – in particular, when demand becomes steeper as price increases – pass-through by a monopolist could exceed 100%.<sup>62</sup>

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<sup>58</sup> See for example RBB Economics, February 2014, *Cost pass-through: theory, measurement and potential policy implications, A Report prepared for the Office of Fair Trading*, p4.

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/320912/Cost\\_Pass-Through\\_Report.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/320912/Cost_Pass-Through_Report.pdf)

<sup>59</sup> i.e. if there is perfectly inelastic supply, which means the supply curve is vertical for the levels of output in question. No pass-through would also occur if demand is perfectly elastic.

<sup>60</sup> i.e. if there is perfectly elastic supply, which means the supply curve is horizontal for the levels of output in question. 100% pass-through would also occur if demand is perfectly inelastic (i.e. unresponsive to price).

<sup>61</sup> See for example RBB Economics, February 2014, *Cost pass-through: theory, measurement and potential policy implications, A Report prepared for the Office of Fair Trading*, section 3 and p65.

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/320912/Cost\\_Pass-Through\\_Report.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/320912/Cost_Pass-Through_Report.pdf)

<sup>62</sup> See for example RBB Economics, February 2014, *Cost pass-through: theory, measurement and potential policy implications, A Report prepared for the Office of Fair Trading*, section 3 and p60.

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/320912/Cost\\_Pass-Through\\_Report.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/320912/Cost_Pass-Through_Report.pdf)

## The extent to which cost rises vary between firms

- A7.9 Cost increases that particularly affect only a few firms (or just one) may lead to lower levels of pass-through. For example, if just a single firm faces a rise in costs then it is less attractive for it to raise its prices as many of its current customers may switch to its rivals (whose prices and costs have not changed). The strength of this effect depends on the strength of competition. For example, if firms' products are differentiated or if consumers are less prepared to switch (due to switching costs or lack of transparency about alternatives), then a firm may be less concerned that significant numbers of its consumers would switch to rivals in response to a relative price rise.
- A7.10 The impact on consumers also depends on how the other firms whose costs have not changed react. However, it is difficult to make general predictions about the effect of firm specific cost increases on prices in oligopoly settings – i.e. industries with a limited number of competitors. Rather, it depends on the particular scenario being examined, including strategic interaction between competitors, product differentiation and the dimensions of competition (e.g. competition in price and/or quantities).<sup>63</sup>

## The time period under consideration

- A7.11 The extent to which changes in costs lead to higher prices may also vary over time. This is because many features of the market may differ over a longer timescale. For example:
- supply may become more elastic in the long run as it may be easier for firms to expand capacity;
  - the elasticity of demand may also change, for example if consumers find it easier to switch to other products and services in the long run;
  - if in the short run pass-through were less than 100%, firms' margins may fall and as a result, some might exit the market. If competition became less intense, this may lead to higher prices in the longer run; and
  - if firms face menu costs associated with changing price (e.g. updating price lists), in the short term prices may be relatively sticky. There may also be contractual limits on changing prices, at least for existing consumers, in the short run.

## Empirical findings on pass-through

- A7.12 There has been a limited number of empirical studies of pass-through and comparing the results of these studies should be done with caution as the measures of pass-through may be calculated differently between studies.<sup>64</sup> Recent

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<sup>63</sup> See for example RBB Economics, February 2014, *Cost pass-through: theory, measurement and potential policy implications, A Report prepared for the Office of Fair Trading*, p 5 and section 4. [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/320912/Cost\\_Pass-Through\\_Report.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/320912/Cost_Pass-Through_Report.pdf)

<sup>64</sup> See for example RBB Economics, February 2014, *Cost pass-through: theory, measurement and potential policy implications, A Report prepared for the Office of Fair Trading*, section 7. [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/320912/Cost\\_Pass-Through\\_Report.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/320912/Cost_Pass-Through_Report.pdf)

studies reveal a wide range in pass-through across different sectors. Pass-through can range from as low as around 10% to 20% to over 100% in isolated studies.<sup>65</sup>

- A7.13 However, none of the studies referred to in the previous paragraph include fixed telecoms services and we are not aware of any specific studies of pass-through in fixed telecoms.
- A7.14 That said, there have been academic studies of the so-called “waterbed” effect between mobile call termination rates (MTRs) and mobile retail prices. It has been argued that regulated reductions in MTRs may result in a rebalancing of charges by mobile providers, with rises in prices for mobile subscribers. Academic research using international data found that:<sup>66</sup>
- for the period 2002-2006, cuts in MTRs led to increases in mobile customers’ bills;<sup>67</sup> but
  - this was not the case once data for the period 2002-2011 was looked at.<sup>68</sup>
- A7.15 Lower MTRs will reduce the wholesale revenue (and margin) that a mobile provider earns from fixed and international telecoms providers. Accordingly, lower MTRs can result in a rise in the net cost of serving mobile consumers. Thus, the finding in relation to 2002-2006 might suggest that the rise in the net cost of serving mobile customers led to some cost pass-through, at least in relation to mobile services (although see the caveats below).
- A7.16 The finding in relation to 2002-2011 suggested that this waterbed effect was no longer visible. However, this does not preclude the possibility of at least some pass-through. The findings from the later study appear to reflect a decline in the relative importance of fixed to mobile calls over this time. If fixed to mobile calls are now less important, lower MTRs have less of an impact on the net cost of serving mobile consumers.
- A7.17 In any event, this research may be of limited value in the context of UK fixed telecoms since it is based on international evidence in relation to mobile services. Moreover, a change in termination rates will not necessarily impact on providers

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<sup>65</sup> Some of the empirical evidence supports parts of the theoretical discussion above. Price responses to firm specific cost changes are smaller than for industry wide cost changes. Even with industry wide changes, individual firms change prices at different rates. There is also some limited evidence that higher levels of market power are associated with lower pass-through rates. The limited studies available also confirm the importance of the shape of the demand curve for the magnitude of the price response. See RBB Economics, February 2014, *Cost pass-through: theory, measurement and potential policy implications, A Report prepared for the Office of Fair Trading*, table 8, pp127 and 128. [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/320912/Cost\\_Pass-Through\\_Report.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/320912/Cost_Pass-Through_Report.pdf)

<sup>66</sup> Genakos C and Valletti T, 2015, Evaluating a decade of mobile termination rate regulation, *The Economic Journal*

<sup>67</sup> Genakos C and Valletti T, 2015, Evaluating a decade of mobile termination rate regulation, *The Economic Journal* - found that using data for the period 2002 to 2006 “countries that introduced regulation that cut the termination rates caused a significant waterbed effect, whereby a 10% reduction in MTRs led to a 5% increase in mobile retail prices, varying between 2% to 15% depending on the estimate.”

<sup>68</sup> Genakos C and Valletti T, 2015, Evaluating a decade of mobile termination rate regulation, *The Economic Journal* - found that “using an extended data set covering 27 countries from 2002 to the end of 2011. Our new results demonstrate that the waterbed effect is not present anymore on average across the whole sample.”

(and in turn retail prices) in the same way as a pure cost change. Rather lower termination rates have several interacting effects which reflect the two-sided market in question (i.e. wholesale termination on one-side and retail subscribers on the other). In contrast, traffic flows (between customer groups and across operators), and strategic pricing interactions (e.g. raising rivals' costs via termination rates) do not feature in the context of automatic compensation for poor quality of service.

- A7.18 In relation to fixed telecoms pricing, Ofcom considered the effect of lower MTRs on retail calls to mobiles set by fixed providers in the March 2015 mobile call termination review.<sup>69</sup> As shown in Figure A5.29 and Table A5.2 of that statement, pass-through by fixed providers of lower MTRs was around 50% or less in aggregate, and for residential tariffs was lower still (with a maximum pass-through of around 40% for the three years analysed).
- A7.19 However, in the 2015 MCT statement it was also recognised that pass-through would not necessarily be on the price of calls per se – it might instead be on other parts of the tariff – and against a background of generally increasing call prices.

### **The extent to which the costs of automatic compensation might be passed through to fixed residential telecoms prices**

- A7.20 As set out in section 9, the introduction of automatic compensation for fixed residential telecoms services would be likely to impose extra costs on providers. The theoretical and empirical discussions above suggest that the extent to which such costs will be passed through to consumers is difficult to predict.
- A7.21 In terms of the nature of the rise in costs, as set out in section 9 we estimate that increases in compensation payments make up the vast bulk of the cost increase facing firms. Specifically, we estimate that the increase in compensation would be around £147–185m per year while the implementation costs would be around £4.0m per year. This suggests that the majority of the costs arising from automatic compensation would be likely to be marginal with respect to the number of subscribers. This suggests that per subscriber prices (e.g. monthly line rental or monthly subscription charges) might be more likely to increase as a result of the introduction of automatic compensation than other prices (e.g. call packages or out of bundle usage charges). However, we recognise the complexity of tariffs in fixed telecoms could mean that other parts of the package price might be adjusted.
- A7.22 Furthermore, cost rises would be likely to vary considerably between providers. This would reflect differences in the number of subscribers and the number of quality of service problems as well as differences in the current amounts of compensation paid. The implementation costs may also vary from provider to provider.<sup>70</sup> Figure A7.1 shows our estimate of cost increases for various providers. These differential cost increases might limit the extent to which retail prices would increase.

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<sup>69</sup> Ofcom, *Mobile call termination market review 2015-18*, Annex 5, March 2015

[https://www.ofcom.org.uk/data/assets/pdf\\_file/0034/79369/annex\\_1\\_to\\_annex\\_6-final.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0034/79369/annex_1_to_annex_6-final.pdf)

<sup>70</sup> Cartesian's study for Ofcom investigates the potential implementation costs of auto-compensation across the industry. Section 5 (section 5.3.3.) of the document outlines the main findings and shows that under base case assumptions, the cost of the policy varies by size and type of provider (small, medium, large, vertical and Third Party Integrator). Cartesian, *Automatic Compensation*, March 2017: [https://www.ofcom.org.uk/data/assets/pdf\\_file/0027/98712/automatic-compensation-cartesian-report-cost-model.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0027/98712/automatic-compensation-cartesian-report-cost-model.pdf)

## Figure A7.1: Per CP costs increases [X]

Note (\*): As well as passing through some of the costs to consumers, retailers may also offset some of the costs through payments from network operators for the quality of service issues that they are responsible for (see section 8). Given Openreach is the largest network operator, this may increase the costs incurred by BT. Insofar as Openreach subsequently increases its charges, some of these costs will be passed back to the retail providers using its network.

A7.23 While we have limited knowledge of the precise shape of the demand and supply curves for different fixed telecoms services, a few generalisations are possible:

- Demand is probably relatively inelastic. Moreover, many fixed telecoms services are now sold on an access (fixed charge) basis, rather than on a usage (e.g. per call minute) basis. As a result, it may be relatively difficult for buyers to flex their spend in response to a price rise, without giving up their fixed telecoms service entirely.<sup>71</sup>
- Where retail supply is concerned, this involves customer-facing activities combined with the sourcing of network services from a wholesale provider (or self-supply using a network with often fixed and sunk costs). The cost of supplying an extra subscriber may not increase materially as a retail provider increases its subscriber base within the existing geographic footprint of that network.<sup>72</sup> This may imply that supply is relatively elastic (at least across the existing network footprint).

A7.24 In combination, these relative elasticities suggest that pass-through could be fairly high if the costs of automatic compensation were felt equally by all providers (which the preceding table suggests may not be the case – given the expected variation in cost per line).

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<sup>71</sup> There are several indications to suggest that demand for fixed telecoms might be relatively inelastic. For instance, retail line rental charges have increased between 25% and 49% depending on the provider, in real (i.e. inflation-adjusted) terms between December 2009 and December 2016. This is an average of between 3% and 6% per year - see paragraph A8.59, *The review of the market for standalone landline telephone services: Annexes, Consultation, February 2017*. [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0027/97812/Annexes-Review-of-the-market-for-standalone-landline-telephone-services.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0027/97812/Annexes-Review-of-the-market-for-standalone-landline-telephone-services.pdf)

At the same time, the number of fixed lines has also risen - the number of residential lines in the UK has increased by 13% since Q4 2009, from 23.4 million in Q4 2009 to 26.4 million in Q3 2016 - see paragraph A8.14, *The review of the market for standalone landline telephone services: Annexes, Consultation, February 2017* [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0027/97812/Annexes-Review-of-the-market-for-standalone-landline-telephone-services.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0027/97812/Annexes-Review-of-the-market-for-standalone-landline-telephone-services.pdf) and Ofcom's Telecoms data updates here: <https://www.ofcom.org.uk/research-and-data/telecoms-research/data-updates>

Similarly, in the recent Narrowband Market Review Ofcom found that "Consumers have a limited willingness to abandon their landline (i.e. access and calls) and this is likely to limit the overall indirect constraint from mobile." Ofcom, *Narrowband Market Review, Consultation, December 2016*, paragraph 4.155. [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0016/95011/Narrowband-Market-Review.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0016/95011/Narrowband-Market-Review.pdf)

<sup>72</sup> The cost of serving new customers in geographic areas not yet served will typically be higher than in areas already served, since network deployments will prioritise areas of higher customer density (e.g. users per exchange).

- A7.25 In relation to the level of competition, this does not fit with the model of perfect competition (or perfect contestability), since there are barriers to entering as a retail provider. Retail fixed telephony markets are characterised by a small number of large players (e.g. BT Group (including EE), Sky and Virgin Media together accounted for just under the 80% of the fixed broadband market in 2015)<sup>73</sup> and while there may be strong competition for some segments, in others this appears not to be the case. For example, in a recent review of standalone landline telephone services, we provisionally found that consumers who buy bundled services are getting more for their money than before. However, consumers that do not take bundled services have not benefited from competition in the same way. We provisionally concluded that BT has significant market power in the market for standalone landline telephone services.<sup>74</sup>
- A7.26 In relation to the speed of pass-through, we observe that consumers can sign up to 12 or 18 month contracts with their provider. While in principle this might moderate the short-term impact on retail prices as a whole (since many consumers might still be within contract), off-setting this would be the proposed implementation period for automatic compensation (proposed at 12 months) meaning that providers could anticipate future costs of automatic compensation in their retail pricing before the policy becomes effective.
- A7.27 Finally, if providers make investments to reduce their expected pay-outs of automatic compensation, this would further reduce the pressure to increase retail prices.

## Conclusion on expected pass-through to fixed residential prices

- A7.28 In summary, the available evidence does not allow us to identify with much precision the extent to which the costs of automatic compensation would be passed through to end consumers. However, we expect that:
- **At least some pass-through would occur in the medium-term:** Short-term, pass-through may be limited, but as consumers move out of contract and as providers revise their pricing and marketing, this would provide the opportunity for revisions to retail pricing. Some degree of pass-through would also be consistent with the empirical findings in most other sectors and the alternative, of zero or near-zero, pass-through requires strong assumptions. For example, fixed (perfectly inelastic) supply and/or highly elastic demand, both appear unlikely in the case of fixed telephony.
  - **Pass-through would be unlikely to be full:** Even in the medium- to longer-term, we do not expect pass-through would be full. This is supported by (i) the likely variation in the cost of automatic compensation for different providers; and (ii) the fact that while there is competition in fixed telephony, it is not a perfectly competitive market. High levels of pass-through (i.e. above 100%) are also rarely observed in empirical studies of other sectors, although limited inferences can be drawn from the empirical work on other sectors (including studies of the mobile waterbed effect). The pricing of fixed providers in relation to calls to mobiles,

<sup>73</sup>See [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0021/12828/facts-figures-table16.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0021/12828/facts-figures-table16.pdf)

<sup>74</sup> Ofcom, *The review of the market for standalone landline telephone services: Provisional conclusions*, February 2017, paragraphs 1.3-1.8, 1.14-1.20.  
[https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0030/97806/Consultation-Review-of-the-market-for-standalone-landline-telephone-services.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0030/97806/Consultation-Review-of-the-market-for-standalone-landline-telephone-services.pdf)

suggests that direct pass-through has not been full for cost changes arising from recent reductions in MTRs (which were quite significant for the period analysed).

## Pass through by consumer segment

- A7.29 Due to the complexity of competition at the retail level, it is difficult to predict in advance how retail prices would change in response to the introduction of automatic compensation. This is because CPs have discretion over the level and structure of their prices and product/service offerings, and may respond differently to these proposals. However, we anticipate that any price increases would more likely be on the fixed charges of consumers' tariffs, such as the line rental or monthly subscription. If this is the case, those consumers with little "out of package" spend (e.g. few calls outside their inclusive minutes or those not exceeding data download caps) would be most affected by any retail price increases.
- A7.30 For those on lower household income, telecoms may comprise a greater proportion of their monthly budget. However, even for those taking the lowest priced landline and broadband packages, we expect that the potential maximum price increase (£9 per annum if pass-through were full – see section 9, paragraph 9.39) would be less than 4% of their annual telecoms spend.<sup>75</sup>
- A7.31 It is difficult to determine precisely how end consumers would respond to these price changes. Given that demand for landlines appears relatively price inelastic, we anticipate that few, if any, consumers would give up their line in response. It is possible that some consumers might choose to switch provider if prices were increased more by some providers than others (e.g. because certain providers experienced above average amounts of quality of service problems). But where consumers are incentivised to switch away from lower quality providers to higher quality providers, we consider that this would be consistent with a better functioning retail market.

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<sup>75</sup> This was calculated using data from the price comparison website USwitch (searched 16<sup>th</sup> March 2017) to generate broadband and phone packages and then choosing one of the cheaper deals currently available. For example, SSE provides a broadband, line rental and evening and weekend calls package for £19.50 a month. This was multiplied by 12 to get a total yearly bill of £234.

## Annex 8

# Scope for quality of service improvements

## Introduction

- A8.1 Our provisional assessment is that our proposals would further consumers' interests by putting those who suffer quality of service problems in a fairer position. In addition, automatic compensation would create a financial incentive for providers to reduce the number of quality of service incidents for which they are responsible.
- A8.2 Quality of service improvements stemming from providers responding to that financial incentive could also represent a welfare gain.<sup>76</sup>
- A8.3 While our proposals would strengthen the incentives on providers to improve quality of service, we cannot be sure exactly how they would respond to these incentives. Therefore, rather than estimating an expected level of quality of service improvement, we estimate the threshold percentage reduction in harm that would be required for there to be these sorts of welfare benefits from our proposals.<sup>77</sup>
- A8.4 When calculating this threshold, we consider quality of service improvements in isolation from pass-through for simplicity. However, even if there is pass-through, providers would still face similar incentives to those described below, since if the benefit of avoiding a fault is greater than the costs of addressing it, providers can increase profitability by improving service quality.
- A8.5 Having estimated this threshold, we then evaluate whether improvements of at least as much as this would be feasible. We do this by examining past trends in quality of service, performance differences between current providers and common causes of quality of service problems.

## Calculating the quality of service improvement threshold

- A8.6 Under our proposals, providers would be required to pay out compensation at a higher level than they do currently for all qualifying quality of service problems. As such if the expected cost of preventing or resolving a quality of service problem is below the level of automatic compensation then we would expect providers to prefer to resolve the issue.

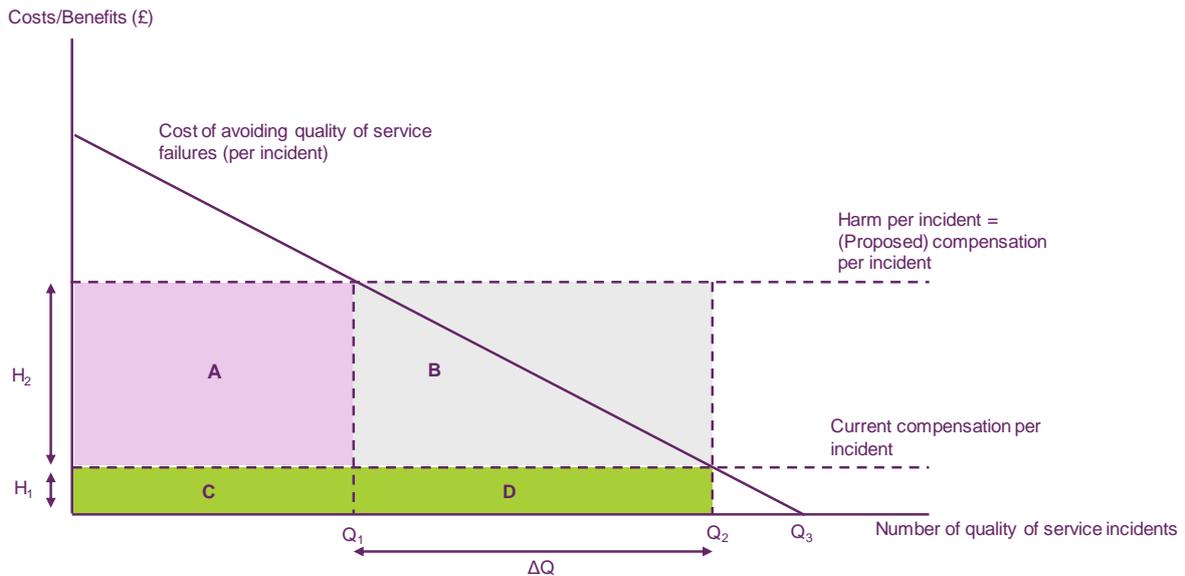
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<sup>76</sup> Quality of service improvements would result in a net gain for society in this respect (or, in economic terms, an improvement in total welfare) where the cost of making such improvements is lower than the harm that they would cause. In general, providers would have an incentive to make quality of service improvements up until the level at which the cost of fixing the problem equals the amount of automatic compensation they would have to pay. Where compensation is equal to the expected level of harm this would tend to encourage providers to make improvements where it is socially desirable to do so.

<sup>77</sup> When calculating this threshold, we consider quality of service improvements in isolation from pass-through.

A8.7 Figure A8.1 below provides an illustration of this incentive effect and the impact on consumers and providers.<sup>78</sup> It shows the number of quality of service incidents on the horizontal axis and the cost of resolving them, as well as the harm from them on the vertical axis.<sup>79</sup> Based on current compensation per incident of  $H_1$ , the current level of quality of service incidents is  $Q_2$ , at which point providers are resolving some issues ( $Q_3-Q_2$ ) and paying some compensation (area C+D). The cost of reducing the remaining incidents below the level  $Q_2$  is shown as the diagonal line rising from  $Q_2$  towards the vertical axis.

**Figure A8.1: Illustration of the scope for quality of service improvements**



Benefits of compensation:	<b>A</b>	Additional compensation paid
	<b>B</b>	Benefits to consumers from fewer incidents
Costs of compensation:	$\frac{1}{2} \times$ <b>B</b>	Costs of resolving quality of service incidents
	(not shown)	Implementation costs
Current compensation:	<b>C+D</b>	Current compensation

A8.8 If a higher level of compensation ( $H_1+H_2$ ) is introduced, then providers will be incentivised to decrease the number of quality of service incidents from  $Q_2$  until the cost of doing so equals the level of compensation they pay-out (at the new level  $H_1+H_2$ ). This occurs at  $Q_1$ , where the marginal cost of resolving further incidents just equals the level of compensation providers would be expected to pay (i.e. at the level  $H_1+H_2$ ).

<sup>78</sup> The Figure is illustrative and makes several simplifying assumptions. For example, it assumes that all incidents result in the same level of harm, that the cost of resolving incidents increases linearly and abstracts from the fact that a retailer and wholesaler may be different entities.

<sup>79</sup> The number of quality of service issues encompasses both the number of instances and the duration of those instances. For example, to interpret the graph for delayed provisions, the number of instances would represent the total number of days of delayed provisions.

- A8.9 Thus, if there is a reduction in quality of service problems, we would expect consumers to receive a gross benefit from a reduction in the harm equal to area B in the diagram, i.e.  $\Delta Q \times H_2$ . However, we know that providers incur a cost in resolving these problems which is equal to half of area B (under our assumption of linear increases in the cost of fixing problems).
- A8.10 We have calculated how large the reduction in quality of service problems  $\Delta Q$  would need to be in order to lead to a net gain in welfare.<sup>80</sup> We have expressed this as a percentage of the initial level of quality of service problems,  $Q_2$ , and refer to this as the threshold level of quality of service improvements.
- A8.11 Applying the approach implied from Figure A8.1 above, we can calculate the threshold for our proposals as follows. Absent any quality of service improvements we calculate a net cost to of £3.7m.<sup>81</sup> If total harm can be reduced by exactly this amount then we reach the break-even point, at which our proposals would have a neutral effect on total welfare. This occurs if the number of quality of service incidents falls by 3-4%.<sup>82</sup>
- A8.12 This estimate of 3-4% assumes that the cost of avoiding quality of service problems increases at a linear rate. However, if:
- the cost of reducing quality of service problems rises at a slower rate then the threshold is lower (in the extreme, if providers could resolve some of these faults through efficiencies that were costless to implement then our estimate would be only 2%);<sup>83</sup>
  - the cost of reducing quality of service problems increase at a steeper rate then the threshold would be higher.

## Feasibility of quality of service improvements

- A8.13 We now review available evidence to determine whether it is possible that quality of service improvements could be of the magnitude of the threshold of 3-4% estimated above. We review past quality of performance levels, differences between providers and common causes of faults.

<sup>80</sup> In the sense contemplated in this Annex.

<sup>81</sup> In section 9 we described the impacts that we have identified and quantified. Under our proposals we expect annual implementation costs to be £4.0m. Offset against this is a benefit for consumers of £0.3m from reduced time and effort in claiming compensation. Combining these leads to an estimated net cost of £3.7m. Note that, in this analysis, increased compensation represents a transfer from providers to consumers and thus cancels out in a calculation of total benefits for society.

<sup>82</sup> At the breakeven level the net benefit (i.e.  $(H_1 \times \Delta Q) + (H_2 \times \Delta Q)/2$ ) from Figure A4.1) should equal the net cost (NC). Therefore,  $\Delta Q = NC / (H_1 + H_2/2)$ . Expressing this as a proportion of the current level of quality of service problems  $\Delta Q / Q_2 = NC / [Q_2 \times (H_1 + H_2/2)] = NC / (Q_2 \times H_1 + Q_2 \times H_2/2)$ . Figure 12 in section 9 showed that the current level of compensation payments is £16.3m and the upper end of the expected increase in payments is £185m. Therefore,  $\text{£}3.7\text{m} / (\text{£}16.3\text{m} + \text{£}185\text{m}/2) = 3\%$ . Using the lower end of our range for the increase in compensation (£147m) leads to an estimate of around 4%.

<sup>83</sup> The estimate of 2% can be calculated by removing the assumption of linear cost increases and therefore by not dividing the estimate of £185m by a half in the calculation explained in the preceding footnote i.e.  $\text{£}3.7\text{m} / (\text{£}16.3\text{m} + \text{£}185\text{m}) = 2\%$ .

## Past trends

- A8.14 We consider that examining past changes in the level of quality of service incidents is relevant because it indicates the technical and economic feasibility of operating at different levels.
- A8.15 Providers who use access inputs from Openreach form by far the largest proportion of providers in the UK. We have therefore reviewed evidence from Openreach to assess how it has performed in recent periods.

## Loss of service

- A8.16 We have first observed that over a five year period (2011/12 to 2016/17) Openreach reported [X] fault repairs.<sup>84</sup> Of these we consider that [X] relate to activities where Openreach incurs a material cost. [X] We consider that this is supporting evidence that there are at least some faults which are costless, or low cost, to resolve.
- A8.17 We have then also found that over the period 2011/12 to 2016/17 the proportion of Openreach lines with a fault each year has varied between [X]<sup>85</sup> This suggests that over a period of five years there has been variation of at least [X].
- A8.18 Further, past trends suggest that periods of increased network faults can be halted through quality of service programmes. Such improvements by Openreach have been both technically and economically feasible in the past. For example, in 2007/08, a joint sealant programme was implemented to improve the copper network and this led to a significant reduction in fault rates of around a third.<sup>86</sup>

## Provisioning

- A8.19 We have also found that there is some variation over time in the proportion of provisions completed on time. Figure A8.2 shows the proportion of provisions that were completed on time on the Openreach network for WLR, MPF and FTTC services, between August 2014 and January 2017. [X] We consider that this indicates there is a feasibility of percentage point improvements of the order of [X] in the proportion of provisions completed on time.

### Figure A8.2: Proportion of provisions completed on time

[X]

- A8.20 Therefore, while we recognise that the historical evidence above is not definitive, it nonetheless suggests that quality of service improvements of the threshold calculated above or higher have been historically possible on Openreach's network.

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<sup>84</sup> The number of faults includes WLR, MPF and FTTC faults, Care levels 1 and 2, SFVA as FTTC and only customer reported faults (except those in Northern Ireland which are included). Source: Ofcom analysis of BT data submitted in response to the 6<sup>th</sup> FAMR QoS information request of 3 March 2014, the 2<sup>nd</sup> QoS information request to BT of 3 May 2016, the 4<sup>th</sup> QoS information request to BT of 18 November 2016 and the 5<sup>th</sup> QoS information request to BT of 15 December 2016.

<sup>85</sup> Ofcom analysis of BT data submitted in response to the 6<sup>th</sup> FAMR QoS information request of 3 March 2014, the 2<sup>nd</sup> QoS information request to BT of 3 May 2016, the 4<sup>th</sup> QoS information request to BT of 18 November 2016 and the 5<sup>th</sup> QoS information request to BT of 15 December 2016.

<sup>86</sup> BT, BT Group Plc, Fourth Quarter Results, 12 May 2009, P6.

<https://www.btplc.com/Sharesandperformance/downloads/Financialpresentations/q409transcript.pdf>

## Differentiation in provider quality of service

- A8.21 We have also reviewed the variation in quality of service problem between providers. Providers are achieving a range of different rates of quality of service failure. The variation exists both between providers using the same underlying access network (i.e. the Openreach network) as well as between providers on different access networks.
- A8.22 Figure A8.3 below details the average quality of service failure rates across the industry and also states the range for the providers from which we received evidence. It shows that across each type of incident there is substantial variation and potentially scope for providers to 'catch-up' to the best performing providers.<sup>87</sup>
- A8.23 The average performer is between 31–48% better than the worst performer across the different types of problem, whereas the best performer is between 72–85% better than the average across the different types of problem. Therefore, improvements by those providers who are not the best performing could be sufficient to improve the overall industry performance by 3-4% or more.

**Figure A8.3: Variation between providers in quality of service failures**

	Loss of service (days of loss of service per line per year)	Delayed provisioning (days of delay per provision per year)	Missed appointments (Proportion missed)
Industry average rates (weighted by subscribers)	0.51	1.22	3%
Range (best and worst performing operators)	[<math>\times</math>]	[<math>\times</math>]	[<math>\times</math>]
Difference between average and best performing operator (percentage of average) <sup>1</sup>	[<math>\times</math>]	[<math>\times</math>]	[<math>\times</math>]
Difference between worst performing operator and average (percentage of worst) <sup>2</sup>	[<math>\times</math>]	[<math>\times</math>]	[<math>\times</math>]

<sup>1</sup> These calculations take the average performer rate as the base, for example [<math>\times</math>]

<sup>2</sup> These calculations take the worst performer rate as the base, for example [<math>\times</math>]

Source: Ofcom analysis of operator data collected under S135 information requests by Ofcom in August 2016.

## Causes of faults

- A8.24 We have also examined the most common causes of quality of service incidents with a view to assessing whether these causes are of the type that can be easily or inexpensively rectified. The more causes that seem easily addressable (e.g. errors in information input) than those which may require more substantive effort (e.g. hard line faults), the more likely it is that providers will be able to respond to incentives to improve quality of service.

<sup>87</sup> [<math>\times</math>] Given the technical differences between Virgin Media's cable network and BT's copper and fibre network, this may mean there is some difference in the quality of service that can be achieved on each network. [<math>\times</math>]

A8.25 Providers have given us evidence in formal information requests on the most common reasons for quality of service problems. We asked providers for the five most frequent reasons for each of these quality of service problems. We have summarised these in Figure A8.4 below.

**Figure A8.4: Common causes of quality of service failures**

Loss of service	CPs citing (out of 8)	Delayed provisioning	CPs citing (out of 8)	Missed appointments	CPs citing (out of 8)
Workforce planning/high workstack	3	Further investigation or specialist equipment required	4	Openreach unavailability	5
Unexpectedly high demand	2	Engineer time-outs	3	Appointment booked or amended incorrectly	3
Intermittent faults	2	Construction issues	2	Openreach unable to locate property or address	2
Failing to send exact fault to Openreach	1	Missed appointment	1	MBORC	1
MBORC	1	Field/equipment issues	1	Further work required	1
Lack of ability to contact customer	1	Customers provided incorrect/inconsistent instructions	1	-	-
System driven failures	1	Unoccupied address	1	-	-
Follow-up required due to lack of expertise	1	Information incorrectly inputted	1	-	-
Delay in line plant availability	1	Hardware delays	1	-	-
Delay in planning	1	Further engineer required	1	-	-
Further investigation required	1	-	-	-	-

*Note: We have paraphrased some of the responses, rather than repeating verbatim text in order to group them into comparable categories. Not all providers gave exactly five responses for each type of quality of service problem.*

*Source: Ofcom analysis of operator data collected in response to s.135 information requests, dated August 2016, responses to Annex 3.*

- A8.26 The evidence from providers in Figure A8.4 above shows a wide range of potential causes for quality of service problems. While it is difficult to determine which of these causes might be most easily rectifiable, the problems caused by information issues seem most likely to be rectifiable at relatively low cost. For example, one provider said that failing to send correct information to Openreach was a common cause of delayed repair, another provider said that information incorrectly entered was a common cause of delayed provisions and three providers said that appointments being booked or amended incorrectly were the most common causes of missed appointments. We consider that these types of informational errors should be relatively straightforward (and low cost) to address.
- A8.27 Overall, there are a range of causes to quality of service problems and it seems possible that a proportion of these will be low cost to address.

### **Provisional conclusion**

- A8.28 We have considered whether it is feasible for there to be a reduction in quality of service problems higher than the 3–4% threshold for welfare enhancing improvements estimated above. While it is not possible to be definitive, our provisional judgment is that the likely reduction in quality of service problems could be at least of this magnitude.

## Annex 9

# Estimates of mobile loss of service

- A9.1 As noted in Section 12, paragraph 12.9, in the absence of definitive and comparable data from the mobile network operators (MNOs) on the numbers of customers likely to be affected by the mast failures they have reported, it was necessary to develop a method of deriving a first order estimate of the aggregate number of consumers affected. This is described below, including the high-level assumptions we have necessarily had to make, and the gaps in our data set and consequent limitations of the results.
- A9.2 We have used the findings from this analysis in Section 12 on delayed repair of mobile loss of service.

## Providers covered in our estimates

- A9.3 We sent formal information requests to the four MNOs; EE, Vodafone, O2 and Three.

## Data collected

- A9.4 In these requests, we asked MNOs to provide the following for each of the last 12 months (January – December 2016):
- Updated location of operators' masts, where there are any differences from the data already collected in June 2016 for the Connected Nations 2016 report
  - Total call minutes and GB of data traffic carried (3G and 4G combined); and
  - Total duration of unplanned outages that caused loss of voice and/or data services.

## Methodology, assumptions and key limitations of our analysis

- A9.5 Due to the nature of mobile network design most geographic areas would have overlapping coverage from multiple masts. However, certain masts, which serve areas which are not served by an adjacent mast in the event of a mast outage, can be regarded as "critical masts".
- A9.6 In order to determine which masts might fall into this category, we used the following assumptions:
- Any mast 3km or more from the next nearest mast and at a location within the rural area classification;
  - All masts that were 5km or more from the next nearest mast; and
  - The specific distances were chosen to consider the impact of overlapping coverage and potential issues with rural and remote geography.
- A9.7 We determined the distances between masts for each operator using the location data provided by the MNOs. Along with our postcode and household location

information derived from the ONS (Office for National Statistics) datasets, this allowed us to determine if these were urban or rural masts, and the number of households served.

### **Overall limitations of our analysis**

- A9.8 MNO data was incomplete so we have had to extrapolate to provide a complete dataset for all four MNOs over a 12-month period, which could introduce distortions.
- A9.9 Neither of the two approaches we used (set out below) accounts fully for the mobility of customers; in practice customers will move between the coverage areas of different sites over any given period.
- A9.10 The approaches also do not consider the impact of topographic features of the area addressed or the directionality of the antennas used on the mast.
- A9.11 Our models do not consider actual coverage areas and some of the masts we have classified as critical may in fact have overlapping coverage from other masts. Equally some masts that are not classified as critical masts may not have overlapping coverage and hence an outage could cause loss of service to consumers. Consequently, it is difficult to assign a high level of confidence to the extent to which potentially overlapping coverage was in place to support service in the event of any particular mast failure.
- A9.12 Using the ONS national ratio of people to households (see below) may be a misestimation. We have attempted to compensate for this by also using overall usage at a particular site to infer number of users, based on average use statistics, as detailed below.

### **Capacity and usage based approach**

- A9.13 This approach looks at the traffic levels each mast generates and utilises the average per customer usage for voice and data to estimate the potential number of customers attached to a mast at the peak of the month.
- A9.14 We undertook the following steps:
- We used each operator's data to determine total customer usage for the year (voice/data) and customer base (including wholesale usage minus machine to machine).
  - We then divided the traffic totals with the customer base to determine the average usage per customer for 12 months for voice and data.
  - These averages were then applied to individual mast traffic to determine the average number of customers on each mast.
  - Each MNO provided a total seconds/minutes lost record per month for each mast, allowing us to calculate the unavailable time of a mast.

## Household based approach

A9.15 This approach looks at the number of households that are within the area of a mast that meet the criteria of “rules for modelling harm”<sup>88</sup>. We then utilise population and market share information to determine potential harm.

A9.16 We used the following process:

- Selected all the masts that were reported to have an outage.
- A circle of radius;  $r = \text{Distance to nearest mast}/2$  was drawn around the masts. We have assumed uniform coverage within the circle.
- To simplify the analysis, we aggregated premises into a 100x100m grid. Each grid point will then contain the number of premises within the 100x100m pixel it covers.
- Using a mapping tool, we selected all the 'premise grid points' that fall within the circles drawn. This provided us an estimate of the number of premises which could be affected if a mast goes down.
- ONS data provided the national ratio of people per household. Applying this to the number of houses within the mast catchment area provided a view of population per affected mast.
- We took the total number of potentially affected individual consumers in a mast area and then applied the market share ratio of each operator.
- The premise data contains both residential and small business premises. This could inflate the total number of consumers within a coverage area. We therefore applied a reduction factor of 7% to account for the business premises in the dataset.

## Creating an estimate of loss of service

A9.17 The two approaches were assessed to determine the potential range of affected user volumes.

**Figure A9.1: Number of consumers who lose service in one year, by time period**

	>12 hours	>24 hours	>48 hours	>1 week
Number of consumers who lose service ( <b>lower bound</b> )	153,017	111,080	62,830	38,001
Number of consumers who lose service ( <b>upper bound</b> )	782,516	530,632	276,455	94,825

<sup>88</sup> The “rules for modelling harm” are set out in paragraphs A9.5 to A9.7 above.

## Annex 10

# Jigsaw Research

- A10.1 Jigsaw, March 2017, *Automatic Compensation: Consumer experience of provisioning delays, loss of service and missed appointments*:  
[https://www.ofcom.org.uk/data/assets/pdf\\_file/0026/98711/automatic-compensation-jigsaw-report.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0026/98711/automatic-compensation-jigsaw-report.pdf)

## Annex 11

# Cartesian report

- A11.1 (a) Cartesian, March 2017, *Automatic Compensation*:  
[https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0027/98712/automatic-compensation-cartesian-report-cost-model.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0027/98712/automatic-compensation-cartesian-report-cost-model.pdf)
- A11.2 (b) Cartesian, March 2017, *Automatic Compensation Cost Model*:  
[http://www.ofcom.org.uk/\\_data/assets/excel\\_doc/0026/99251/automatic-compensation-cost-model.xlsx](http://www.ofcom.org.uk/_data/assets/excel_doc/0026/99251/automatic-compensation-cost-model.xlsx)

## Annex 12

# Equality Impact Assessment

- A12.1 Ofcom is required to assess the potential impact of all its functions, policies, projects and practices on the equality of individuals to whom those policies will apply. An equality impact assessment (“EIA”) assists us in making sure that we are meeting our principal duty of furthering the interests of citizens and consumers regardless of their background or identity.
- A12.2 We have given careful consideration to whether or not the proposals contained in this document will have a particular impact on race, age, disability, gender, pregnancy and maternity, religion or sex equality. We do not envisage, that our proposals would have a disproportionate impact on any particular group of people.
- A12.3 While there are some differences in take-up and use of landline and broadband services by demographic group,<sup>89</sup> our proposals for automatic compensation are aimed at protecting all consumers from service quality issues across the range of landline services and therefore it is not apparent that these proposals are likely to have any particular impact on race, age, disability, gender, pregnancy and maternity, religion or sex equality.
- A12.4 As set out in Annex 7, providers may pass-through the costs of automatic compensation to consumer bills although it is difficult to predict in advance by how much. For those on lower household income, which may include people from some of the groups listed above, we recognise that telecoms spend may comprise a greater proportion of their monthly budget. However, as also indicated in Annex 7, we expect even the maximum potential bill increase to represent a small proportion of household telecoms spend, even for those taking lower priced packages.
- A12.5 We do not consider it necessary to carry out separate EIAs in relation to race or gender equality, or equality schemes under the Northern Ireland and Disability Equality Schemes. This is because we anticipate that the proposed regulation would not have a differential impact on people of different gender or ethnicity, on consumers in Northern Ireland, or on disabled consumers compared to consumers in general.

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<sup>89</sup> Ofcom, *Communications Market Report 2016*, p.187, p.236:  
[https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0024/26826/cmr\\_uk\\_2016.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0024/26826/cmr_uk_2016.pdf)

## Annex 13

# Industry proposal

A13.1 Industry Proposal:

[https://www.ofcom.org.uk/data/assets/pdf\\_file/0028/98713/automatic-compensation-draft-industry-proposal.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0028/98713/automatic-compensation-draft-industry-proposal.pdf)

## Annex 14

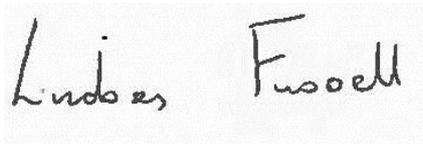
# Notification of proposed new general condition and modifications to the General Conditions under section 48A(3) of the Act

## Proposal to set a new general condition and to modify the General Conditions

1. Ofcom proposes:
  - a. to set a new general condition, and
  - b. to modify the definitions set out in the Annex to the General Conditions of Entitlement.
2. The draft new general condition is set out in Schedule 1 to this Notification and the draft modifications are set out in Schedule 2 to the Notification.
3. Ofcom's reasons for making these proposals, and the effect of the proposals, are set out in the accompanying consultation document.
4. Ofcom considers that the proposals comply with the requirements of sections 45 to 49C of the Act, insofar as they are applicable.
5. Ofcom considers that the proposals are not of EU significance pursuant to section 150A(2) of the Act.
6. In making these proposals, 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. Representations may be made to Ofcom about the proposals until **5pm on 5 June 2017**.
8. If implemented, the new general condition and the modifications shall enter into force on the date of Ofcom's final statement in relation to these proposals, or such later date as may be specified therein.
9. A copy of this Notification is being sent to the Secretary of State in accordance with section 48C(1) of the Act.
10. 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;<sup>90</sup>
  - c. “**Ofcom**” means the Office of Communications.
11. 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.
12. 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.
13. The Schedules to this Notification shall form part of this Notification.

Signed by

A handwritten signature in black ink that reads "Lindsey Fussell". The signature is written in a cursive style and is positioned above a light grey rectangular background.

**Lindsey Fussell**

**Group Director - Consumer**

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

24 March 2017

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<sup>90</sup> On 20 December 2016, Ofcom issued a notification proposing to revoke the existing General Conditions and replace them by setting new general conditions (Ofcom, Review of the General Conditions of Entitlement, Consultation on the general conditions relating to consumer protection, 20 December 2016, available at: <https://www.ofcom.org.uk/consultations-and-statements/category-1/review-general-conditions-relating-to-consumer-protection>). Ofcom anticipates that it will issue a notification under section 48(1) of the Act setting such new general conditions (having considered every representation that has been made to them) before they issue a final statement in relation to the proposals set out in this Notification. The proposed new condition and the proposed modifications set out in the Schedules to this Notification have therefore been drafted on the basis that the new general conditions proposed on 20 December 2016 have been set.

## SCHEDULE 1

The following new general condition shall be inserted into Part C ('Consumer Protection Conditions') of the General Conditions of Entitlement, immediately after the condition entitled 'Complaints handling and dispute resolution'.

### C[x] Compensation

*This condition aims to protect customers purchasing residential landline and broadband packages by ensuring communications providers automatically pay compensation if they fail to meet certain specified service quality standards. It also aims to protect small and medium sized businesses by ensuring that they have sufficient transparency of the contract terms available to them in relation to the payment of compensation for certain failures in service quality.*

#### Scope

- CX.1 This Condition will have effect from [date to be inserted – proposed to be 1<sup>st</sup> day of 13<sup>th</sup> month after publication of final statement], except for paragraphs CX.19 to CX.22, which will have effect from [date to be inserted – proposed to be 6 months after final statement]
- CX.2 Paragraphs CX.5 to CX.18 of this **Condition** apply to any **Communications Provider** who provides **Relevant Voice Services** or **Relevant Broadband Services** intended primarily for use by **Consumers** and, for the purpose of those paragraphs:
- a) any such **Communications Provider** is a “**Regulated Provider**”; and
  - b) any **Customer** who purchases a **Relevant Voice Service** and/or **Relevant Broadband Service** intended primarily for use by **Consumers** (or is seeking to purchase such a service) is a “**Relevant Customer**”.
- CX.3 Paragraphs CX.19 to CX.22 of this **Condition** apply to any **Communications Provider** who provides **Relevant Voice Services** or **Relevant Broadband Services** to **SME Customers** and any such **Communications Provider** is a “**Regulated Provider**” for the purpose of those paragraphs.
- CX.4 For the purposes of this **Condition**:
- a) a “**Relevant Broadband Service**” is an always-on connection to the public internet at a fixed location that provides data at speeds greater than a dial-up connection, including all **DSL** (including **FTTC**) services, **FTTP** services and services provided over a **Cable Network**, but excluding any **Leased Lines Service**; and
  - b) a “**Relevant Voice Service**” is a service provided at a fixed location that allows for the transfer of speech communications and other forms of communications such as facsimile and data up to a speed of 64 kbit/s, including a service provided over a **Cable Network**, but excluding:
    - i) any **Leased Lines Service**; and
    - ii) for the purposes of paragraphs CX.5 to CX.18 only, any **ISDN** service.

#### Compensation for missed appointments

- CX.5 Where a **Relevant Customer** has accepted an appointment for a **Regulated Provider** (or its supplier) to visit the **Relevant Customer's** premises in connection with the provision or repair of a **Relevant Voice Service** and/or a **Relevant Broadband Service**, the **Regulated Provider** must pay **Compensation** to the **Relevant Customer** (subject to the exceptions set out in paragraph CX.13) if either:
- a) the appointment is rearranged by the **Regulated Provider** with less than 24 hours' notice, unless the **Regulated Provider** has obtained the express consent of the **Relevant Customer** to rearrange the appointment to a different time on the same date as the originally agreed appointment; or
  - b) the **Regulated Provider** (or its supplier) does not keep the appointment unless:
    - (i) the **Relevant Customer** has cancelled the appointment or expressly requested that it be rearranged; or
    - (ii) the **Regulated Provider** has rearranged the appointment with notice of 24 hours or more.

CX.6 The **Compensation** payable under paragraph CX.5 is £30 (thirty pounds), which must be paid within 30 (thirty) calendar days after the date of the originally agreed appointment and in accordance with paragraph CX.14.

#### Compensation for delays in provisioning

CX.7 Where a **Regulated Provider** has agreed to **Provide** a **Relevant Voice Service** and/or a **Relevant Broadband Service** to a **Relevant Customer** and has provided to him in a **Durable Medium** the date on which the service is (or services are) to be activated, the **Regulated Provider** must pay **Compensation** to the **Relevant Customer** (subject to the exceptions set out in paragraph CX.13) if the service is (or services are) not activated by midnight on that date (unless the **Relevant Customer** has expressly requested that this activation date be delayed).

CX.8 The **Compensation** payable under paragraph CX.7 is:

- a) £6 (six pounds); plus
- b) an additional £6 (six pounds) in respect of each full calendar day after the original activation date that the service remains (or services remain) un-activated,

*minus* £6 (six pounds) in respect of any full calendar day after the original activation date on which the **Relevant Provider** was unable to activate the service(s) due to the act or omission of the **Relevant Customer**.

CX.9 Each payment of **Compensation** under paragraph CX.7 must be paid within thirty (30) calendar days after the date on which the service is (or services are) subsequently activated and in accordance with paragraph CX.14.

### Compensation for delayed repair following a loss of service

CX.10 Where a **Relevant Customer** has reported to its **Regulated Provider** a **Loss of Service** in relation to a **Relevant Voice Service** and/or a **Relevant Broadband Service**, the **Regulated Provider** must pay **Compensation** to the **Relevant Customer** (subject to the exceptions set out in paragraph CX.13) if any **Loss of Service** is persisting at midnight on the second **Working Day** after the **Loss of Service Trigger Day**.

CX.11 The **Compensation** payable under paragraph CX.10 is:

- a) £10 (ten pounds); and
- b) an additional £10 (ten pounds) in respect of each further full calendar day that any **Loss of Service** persists,

*minus* £10 (ten pounds) in respect of any such further full calendar day during which the **Loss of Service** persisted due to the act or omission of the **Relevant Customer**.

CX.12 Each payment of **Compensation** must be paid within thirty (30) calendar days after the date on which the **Loss of Service** is resolved and in accordance with paragraph CX.14.

### Exceptions to obligation to pay Compensation

CX.13 A **Regulated Provider** is not required to pay **Compensation** to a **Relevant Customer** if:

- a) the event giving rise to the obligation to pay **Compensation** was caused by the act or omission of the **Relevant Customer**, including (but not limited to) circumstances in which the **Regulated Provider** (or its supplier) is unable to obtain access to the **Relevant Customer's** premises;
- b) the **Regulated Provider** reasonably believes that the **Relevant Customer's** report of a **Loss of Service** under paragraph CX.10 is frivolous or vexatious;
- c) it was not reasonably practicable for the **Regulated Provider** to avoid an obligation arising to pay **Compensation** due to the effects of an event for which emergency regulations have been made under Part 2 of the Civil Contingencies Act 2004;
- d) the **Regulated Provider** could reasonably expect that, if it took the action required in order to avoid an obligation arising to pay **Compensation**, it would or would be likely to be in breach of an enactment; or
- e) the **Relevant Customer** has committed an offence under sections 125 or 126 of the **Act**.

### Payment of Compensation

CX.14 Any **Compensation** must be paid by way of a credit to the **Relevant Customer's** bill or prepay account, unless:

- a) at the time payment is made, the **Relevant Customer** will not for any reason be liable to receive any further bill from the **Regulated Provider** and has no

prepay account, in which case the payment must be made as a monetary payment (by way of cash, cheque or electronic transfer) to the **Relevant Customer**; or

- b) in other cases:
  - i) the **Regulated Provider** has offered the **Relevant Customer** the payment by that means and the **Relevant Customer** has expressly consented to the use of an alternative method of payment; or
  - ii) the **Regulated Provider** has informed the **Relevant Customer** of the amount of **Compensation** due and offered to pay it by way of credit to that bill or account, and the **Relevant Customer** has expressly consented to receiving a **Non-Monetary Benefit** as an alternative to the payment of **Compensation**.

#### Provision of information about Compensation to Relevant Customers

CX.15 When a **Relevant Customer** accepts an appointment offered by a **Regulated Provider** (as referred to in paragraph CX.5), the **Regulated Provider** must inform the **Relevant Customer**:

- a) that he may be entitled to **Compensation** if the appointment is not kept or if it is rearranged by the **Regulated Provider** with less than 24 hours' notice; and
- b) that any such **Compensation** would be paid within (30) thirty calendar days following the date of the agreed appointment.

CX.16 When a **Regulated Provider** provides to a **Relevant Customer** the date on which a **Relevant Voice Service** and/or a **Relevant Broadband Service** is / are to be activated (as referred to in paragraph CX.7), the **Regulated Provider** must inform the **Relevant Customer**:

- a) that he may be entitled to **Compensation** if the service is not activated on that date; and
- b) that any such **Compensation** would be paid within (30) thirty calendar days following the date on which the service is subsequently activated.

CX.17 When a **Relevant Customer** reports a **Loss of Service** to its **Regulated Provider** (as referred to in paragraph CX.10), the **Regulated Provider** must inform the **Relevant Customer**:

- a) that he may be entitled to **Compensation** if any **Loss of Service** persists beyond midnight on a named day of the week (with that named day being the second **Working Day** after the **Loss of Service Trigger Day**); and
- b) that any such **Compensation** would be paid within (30) thirty calendar days following the date on which the **Loss of Service** is resolved.

#### Provision of information to Ofcom

CX.18 A **Relevant Provider** must provide information to **Ofcom** about the **Compensation** it has paid during the following periods:

- a) from [*date to be inserted – date on which this paragraph comes into force*] to [*date to be inserted – 6 months after this paragraph comes into force*]; and
- b) each subsequent year thereafter,

by completing the template table made available on the **Ofcom** website from time to time and submitting it to **Ofcom** within one month following the end of each period referred to in sub-paragraphs a) and b).

#### Transparency requirements in relation to SME Customers

CX.19 A **Regulated Provider** must publish the following information in respect of any standard form contract offered to **SME Customers** for **Relevant Voice Services** and/or **Relevant Broadband Services**:

- a) the **Service Level Agreements** (if any) that apply in the event of:
  - i) the **Regulated Provider** failing to activate the service(s) on the date confirmed to a **SME Customer**;
  - ii) a **Loss of Service**; and
  - iii) the **Regulated Provider** (or its supplier) failing to keep a pre-agreed appointment to attend the **SME Customer's** premises;
- b) the **Service Level Guarantee** (if any) that applies for each of the incidences listed in sub-paragraph a);
- c) if applicable, the fact that no **Service Level Agreement** and/or **Service Level Guarantee** applies in relation to an incident listed in sub-paragraph a); and
- d) if applicable, the fact that a **Service Level Agreement** and/or **Service Level Guarantee** may be available in relation to an incident listed in sub-paragraph a), but the exact terms are subject to individual negotiation between the **Relevant Provider** and a **SME Customer**.

CX.20 The **Regulated Provider** must publish the information referred to in paragraph CX.19 in plain English, in an easily accessible place and reasonably prominent manner on its website (or, where there is no such website, in such manner and form as directed by **Ofcom**).

CX.21 When a **SME Customer** enters into a contract for a **Relevant Voice Service** and/or **Relevant Broadband Service** (whether on the basis of a standard form or a bespoke contract), the **Regulated Provider** must provide the **SME Customer** with the information described in paragraph CX.19 a) to c) in respect of that contract.

CX.22 The **Regulated Provider** must provide the information referred to in paragraph CX.21 in a **Durable Medium** that is separate and distinct from the **SME Customer's** contract.

## SCHEDULE 2

1. In Annex 1 ('Definitions') of the General Conditions of Entitlement, the following modifications marked in bold and highlighted in yellow shall be made to the definition of 'Complaint':

"**Complaint**" means:

- a) an expression of dissatisfaction made by a **Domestic and Small Business Customer** to a **Communications Provider** related to either:
- i) the **Communications Provider's** provision of **Public Electronic Communications Services** to that **Domestic and Small Business Customer**;
  - ii) the **Complaint**-handling process itself; **or**
  - iii) the level of customer service experienced by the **Domestic and Small Business Customer**; **and or**
  - iv) the payment of Compensation or a refusal to pay Compensation; and**
- b) where a response or resolution is explicitly or implicitly expected;

2. In Annex 1 ('Definitions') of the General Conditions of Entitlement, each of the following new definitions shall be inserted in the appropriate alphabetical place:

"**Compensation**" means a monetary payment to be made by a **Regulated Provider** to a **Customer** in accordance with Condition C[X];

"**Fibre-To-The-Premises**" or "**FTTP**" means an **Access Network** consisting of optical fibre extending from the local access node to a **Network Termination Point**;

"**ISDN**" means integrated services digital network;

"**Leased Line Service**" means the provision of dedicated point-to-point transmission capacity;

"**Loss of Service**" means:

- a) in relation to a **Relevant Voice Service** (as defined in the "Scope" section of Condition C[X]), either:
- ii) where the **Customer** is unable to make an outgoing call or to receive an incoming call; or
  - iii) where the service only allows for one-way transmission,
- b) in relation to a **Relevant Broadband Service** (as defined in the "Scope" section of Condition C[X]), where the **Customer** is unable to access the public internet,

in each case as a result of a planned or unplanned change in the operation of any **Electronic Communications Network** (and/or elements of that network) over which the service is provided, including any failure of equipment;

**“Loss of Service Trigger Day”** means, in relation to a **Loss of Service**, the earlier of:

- a) the day on which the **Customer** reported the **Loss of Service** to the **Regulated Provider**; or
- b) the day on which the **Regulated Provider** otherwise became aware of the **Loss of Service**;

**“Non-Monetary Benefit”** means a benefit other than a monetary payment, including the provision of a service upgrade or additional service for free or at a discounted rate;

**“Provision”** means:

- a) the installation of a new line or service, including where a **Customer** wishes to have a service provided for the first time or where a **Customer** is moving home and there is no working line at the premises to which he or she is moving;
- b) where a **Customer** is switching or upgrading from one service to another, but remaining with the same **Communications Provider**; or
- c) where a **Customer** is switching from a service provided by one **Communications Provider** to a service provided by a different **Communications Provider**,

and the term **“Provide”** shall be construed accordingly;

**“Service Level Agreement”** means the service quality levels offered by a **Regulated Provider** under a contract;

**“Service Level Guarantee”** means the compensation payable under a contract if the **Regulated Provider** fails to meet a **Service Level Agreement**;

**“SME Customer”** means, in relation to a **Communications Provider**, a **Customer** of that Provider who is not himself:

- a) a **Communications Provider**;
- b) a **Consumer**; or
- c) a **Customer** in respect of an undertaking carried on by him for which more than two hundred and fifty (250) individuals work (whether as employees or volunteers or otherwise);

## Annex 15

# Glossary

**2G** Second generation of mobile telephony systems. Uses digital transmission to support voice, low-speed data communications, and short messaging services.

**3G** Third generation of mobile systems. Provides high-speed data transmission and supports multi-media applications such as video, audio and internet access, alongside conventional voice services.

**4G** Fourth generation of mobile systems. It is designed to provide faster data download and upload speeds on mobile networks.

**ADR** Alternative Dispute Resolution.

**Access network** An electronic communications network which connects consumers to a service provider; running from the consumer's premises to a local access node (a point of aggregation in the access network) and supporting the provision of access-based services. It is sometimes referred to as the 'local loop' or the 'last mile'.

**Base station** The active equipment installed at a mobile transmitter site. The equipment installed determines the types of access technology that are used at that site.

**Broadband** A data service or connection generally defined as being 'always on' and providing a bandwidth greater than narrowband connections.

**CDD (Committed Delivery Date)** The agreed date when an access order will be activated or installed. Also known as Customer Committed Date or CCD.

**Communications Provider (CP)** An operator that provides an electronic communications network or provides an electronic communications service.

**Customer-caused** Where the customer is fully or mainly responsible (for example, due to faulty wiring in the home for a fixed broadband service, or the customer not being home for a landline or broadband engineer visit).

**Digital Communications Review (DCR)** Ofcom's Statement of 25 February 2016 entitled "Making communications work for everyone. Initial conclusions from the Strategic Review of Digital Communications"

**DSL (Digital Subscriber Line)** A family of technologies generally referred to as DSL, or xDSL, capable of transforming ordinary phone lines (also known as 'twisted copper pairs') into high-speed digital lines, capable of supporting advanced services such as fast internet access and video on demand.

**Ethernet** A packet-based technology originally developed for and still widely used in Local Area Networks.

**Femtocell** A small base station, typically installed indoors to improve indoor mobile coverage. A residential femtocell uses the consumer's broadband connection to offload the mobile data onto the fixed network.

**Force Majeure** Incidents that aren't caused by any person or organisation e.g. severe weather conditions causing a loss of service. Also referred to by Openreach as MBORCs (Matters Beyond Our Reasonable Control).

**FTTC** Fibre to the Cabinet. Access network consisting of optical fibre extending from the access node to the street cabinet. The street cabinet is usually located only a few hundred metres from the subscribers' premises. The remaining segment of the access network from the cabinet to the customer is usually a copper pair (see DSL).

**FTTP** Fibre to the Premises. A form of fibre optic communication delivery in which the optical signal reaches the consumer's home without relying on a copper access line.

**GEA (Generic Ethernet Access)** BT's wholesale non-physical product providing retail providers access to broadband products.

**General Condition ('GC')** A general condition imposed by Ofcom under section 45(2)(a) of the Act

**ISP** Internet Service Provider. A company that provides access to the internet.

**Keeping Customers Informed (KCI)** A type of message from Openreach that updates communications providers on the status of orders and trouble reports.

**Landline** Either a standalone fixed voice service or fixed voice as part of a bundle of services

**Local Loop Unbundling (LLU)** The process where incumbent operators make their local network (the lines that run from the customers' premises to the telephone exchange) available to other communications providers.

**Loss of service (broadband)** Where the customer is unable to access the internet and the loss of service requires repair (including early life failure, whereby the service is lost within 28 days of the installation date). This may be a unique loss of service (i.e. affect a single customer) or affect multiple users.

**Loss of service (landline)** Where the customer is unable to either make outgoing calls or to receive incoming calls and the loss of service requires repair (including early life failures, whereby the service is lost within 28 days of the installation date). This may be a unique loss of service (i.e. affect a single customer) or affect multiple users.

**Mbit/s** Megabits per second (1 Megabit = 1 million bits). A measure of bandwidth in a digital system.

**Microbusiness** A business with 10 or less workers (employees, volunteers or otherwise).

**MNO** Mobile Network Operator, a provider who owns a cellular mobile network.

**Mobile Broadband** Various types of wireless, high speed internet access through a mobile telephone or a mobile data dongle.

**Monetary compensation** Financial compensation in cash or on account (for example cash, bill credits, cheque or electronic forms of payments) as opposed to compensation in kind (such as free service offers, vouchers, forward-looking discounts or similar).

**MVNO** Mobile Virtual Network Operator. An organisation which provides mobile telephony services to its customers, but does not have allocation of spectrum or its own wireless network and instead buys a wholesale service from a mobile network operator.

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

**Ofcom** The Office of Communications.

**Openreach** BT's access network division.

**Own workforce** Employees, sub-contractors or agents who work for, or on behalf of, a provider.

**PAC (Porting Authorisation Code)** A unique code that the customer needs to obtain from their current provider in order to switch their mobile service. The PAC signifies that the Losing Provider is satisfied that the customer is entitled to port their mobile number to another mobile provider.

**Porting** Where a consumer keeps their telephone number when they switch providers.

**Pro-rata refund** A refund based on the daily cost of the relevant service, applied to the number of days during which service was lost.

**Provisioning (landline and broadband only)** Includes all provision orders, including migrations, transfers and working line takeovers.

**Residential contract or package** Those services predominantly targeted towards residential customers (rather than businesses)

**Retail provider (provider)** An organisation that provides electronic communications services to consumers. The terms 'retail provider' and 'provider' are used interchangeably throughout this document.

**SIM** Subscriber Identity Module. A SIM is a small flat electronic chip that identifies a mobile customer and the mobile operator. A mobile phone must have a SIM before it can be used.

**SLA (Service Level Agreement)** An agreement between a customer and supplier that defines the range of services to be provided, both in scope and performance standard.

**SLG (Service Level Guarantees)** Underpins Openreach's compensation to retail providers for failures across a range of products and services.

**Smartphone** A mobile phone that offers more advanced computing ability and internet connectivity than a basic 'feature' phone.

**SMEs** Small and medium sized enterprises are businesses with 249 or fewer employees.

**Superfast broadband** The next generation of faster broadband services, which delivers headline download speeds greater than 30 Mbit/s.

**Unbundled** A local exchange that has been subject to local loop unbundling (LLU).

**VDSL** Very High Speed DSL. A high speed variant of DSL technology, which provides a high headline speed through reducing the length of the access copper line by connecting to fibre at the cabinet.

**Virtual Unbundled Local Access (VULA)** An access remedy first imposed by Ofcom in the 2010 WLA that requires BT to provide access to its NGA network in a way that is similar to LLU. It provides a connection from the nearest 'local' aggregation point to the customer premises.

**VoIP** Voice over Internet Protocol. A technology that allows users to send calls using internet protocol, over either the public internet or private IP networks.

**Wi-Fi** A short range wireless access technology that allows devices to connect to the internet. These technologies allow an over-the-air connection between a wireless client and a base station or between two wireless clients.

**WLA (Wholesale Local Access)** Covers fixed telecommunications infrastructure, specifically the physical connection between end users' premises and a local exchange.

**WLR (Wholesale Line Rental)** This is a regulatory instrument requiring the operator of local access lines to make services available to competing providers at a wholesale price.