

A1. Approach to obtaining and analysing information from providers

- A1.1 This annex explains our approach to obtaining and analysing service quality information from communications providers and Openreach for the purposes of our annual service quality report.
- A1.2 Ofcom requested data from providers for this report using our powers under section 136 of the Communications Act 2003. Under section 136(1) we may require providers of electronic communications networks and electronic communications services to provide us with all such information as we consider necessary for the purpose of carrying out, with a view to publication and in the interests of the end-users of public electronic communications services, of comparative overviews of the quality of such services.¹
- A1.3 On receiving responses to the information request, we conducted our own analysis of providers' data to assure ourselves that it was comparable and also engaged bilaterally with providers to ensure we understood their data. Where possible, we cross-referred the information received from communications providers to data that we requested from Openreach.
- A1.4 The metrics we have derived from information supplied by providers that we have published in this report on a provider-specific or aggregate basis are:
- i. The percentage of landline and broadband orders delivered by the date agreed with the customer, including any rearrangements agreed in advance [aggregate of Openreach providers and Virgin Media].
 - ii. Average time taken to provide landline and broadband services [Openreach provider table, Virgin Media table; aggregate for Openreach providers and Virgin Media].
 - iii. The percentage of landline and broadband orders completed within 7, 14, 21 and 28 days – urban and rural areas combined [provider-specific].
 - iv. Percentage of orders for landline and broadband services taking more than four weeks (28 days) and eight weeks (56 days) to provide [aggregate using data for BT, EE, Sky, TalkTalk and Virgin Media].
 - v. The percentage of orders for landline and broadband services where a fault is raised reporting that the overall service is not working, within the first eight working days from the day after the new service was provided [Aggregate using Openreach data for BT, EE, Plusnet, Post Office, Sky and TalkTalk].
 - vi. The percentage of appointments missed by workforce [Openreach providers aggregate and Virgin Media only].

¹ As well as prices of such services.

- vii. The percentage of appointments missed by customers [Openreach providers aggregate and Virgin Media only].
- viii. Openreach repair levels used for most residential customer [Openreach providers].
- ix. Overall average call waiting time [provider-specific].
- x. The percentage of calls ended while the customer was queuing to speak to an advisor [provider-specific].
- xi. Contact channel used [aggregate using data for BT Business, TalkTalk Business, Virgin Media and XLN].

A1.5 In this annex, we set out how we have derived these metrics from the data supplied by providers and Openreach. Unless otherwise specified, all metrics have been calculated based on data for the entire calendar year 2017.

In scope providers

- A1.6 The threshold for providers to be included in the scope of our residential information request was that they had 1.5% share of the residential consumer broadband, landline or mobile pay-monthly markets throughout 2017 (this is the same criteria that we have used in our quarterly Telecoms and Pay TV reports which we have been publishing since 2011). The providers that were included were BT, BT Mobile, EE, O2, Plusnet, Post Office, Sky, TalkTalk², Tesco Mobile, Three, Virgin Media/Mobile and Vodafone. KCOM was also included as the universal service provider in Hull.
- A1.7 In some cases, although providers were in scope of the report, they were not able to provide information in line with the definitions we had specified to obtain comparable data. Where we did not believe that a meaningful comparison could be made with an individual provider's data, we excluded them from our provider-specific analysis.
- A1.8 In some instances, while the information provided by a particular provider was not supplied on a sufficiently comparable basis to publish in a provider-specific form, we included it in our aggregate metrics if we believed this would contribute to giving a meaningful indication of cross-sector performance that would be useful to consumers.
- A1.9 Where relevant, we also requested information from Openreach for high-level validation purposes. We asked Openreach to provide data for BT, EE, Plusnet, Post Office, Sky and TalkTalk using the relevant Reseller Identification Codes (RID Codes).³

² TalkTalk Mobile is not included because it has stopped selling new contracts and will not be renewing existing contracts once customers reach the end of their current minimum term.

³ Reseller Identification Codes are a type of code that Ofcom allocates to communications providers for administrative purposes. They are three-character alphabetic codes which are used in the Notification of Transfer (NoT) switching process and can be used to identify a reseller of wholesale services.

Provisioning metrics (landline and fixed broadband services)

- A1.10 To publish a comparative overview of the experience of obtaining a new landline or broadband service, we asked providers to supply data on every order for residential fixed voice and/or fixed broadband service that was completed in 2017. Orders that were placed but subsequently cancelled by the provider or customer were excluded.
- A1.11 For each order, we asked providers to supply the following information:
- The date on which the customer placed an order.
 - “Date 1”: the first committed date the provider agreed with the customer that the service would be provided on, or, if the customer requests a change to Date 1 or Date 2, the date subsequently agreed with the customer.
 - “Date 2”: if the provider requests a change to the date on which it had agreed that the ordered service would be delivered and working on, then Date 2 will be the new date that the provider agrees with the customer that the service will be provided on⁴.
 - “Customer Service Activation Date”: The date on which the provider considers the service to be delivered and working.
 - The type of service being provided (landline, broadband or both).
 - The type of product being provided (e.g. ADSL, Fibre-to-the-cabinet, cable).
 - The type of order, for example, whether it was a new provide or a change to existing service (regrade) or if the customer had moved home and stayed with the same provider.
 - The postcode for the address at which the service was provided.
- A1.12 In analysing the data, we excluded:
- any orders where the service activation date preceded the date the order was placed;
 - any orders where Date 1 or Date 2 preceded the date the order was placed; and
 - any orders that were not completed in 2017.
- A1.13 The orders that were removed accounted for less than 1% of the overall dataset.
- A1.14 All relevant metrics calculated using this provisioning data are measured in calendar days, not working days and we have rounded up to the nearest full day.
- A1.15 We excluded KCOM from all aggregate figures as their provisioning performance continues to be affected by the roll-out of Fibre-to-the Premises (FTTP) on their network. Where appropriate, we have reported on KCOM separately.

⁴ If, on the day the service is due to be provided, the CP requests a further date change, this should not be recorded as a new Date 2.

Metric i: The percentage of landline and broadband orders delivered by the date agreed with the customer, including any rearrangements agreed in advance [aggregate of Openreach providers and Virgin Media]

- A1.16 To calculate the percentage of orders (new lines, home moves and regrades) delivered by the date agreed, (including any prior rearrangements), we first took whichever was the later date in the “Date 1” or “Date 2”⁵ fields to give the latest date that the provider agreed to deliver the service.
- A1.17 We then compared the latest date agreed to deliver the service to the “service activation date.”
- A1.18 If there was no difference between these two dates, this would count as a success.
- A1.19 If the service was activated *before* the latest date agreed for delivery, then this would also be counted as a success.⁶
- A1.20 The percentage of successful deliveries was calculated by dividing the total number of successes by the total number of orders.
- A1.21 Plusnet was not able to provide the date(s) agreed with the customer to deliver the service (i.e. either Date 1 or Date 2) due to how data is captured in their systems, therefore Plusnet could not be included in this analysis.

Metric ii): Average time taken to provide landline and broadband services, [Openreach provider table, Virgin Media table and aggregate for Openreach providers and Virgin Media]

- A1.22 To calculate this metric, we calculated the mean average difference between (a) the date the order was placed and (b) the date that the service was activated. This was calculated separately across Openreach providers (BT, TalkTalk, Sky, EE) and Virgin Media.
- A1.23 In order to identify whether an order was placed for a service in an urban or rural area, we have used the Locale classification.⁷ Locale is a third-party data source based on the analysis of 2011 census output areas (OAs). Each OA is assigned to one of seven Locale Groups using a combination of Government conurbation definitions, population density at the OA- and postcode sector-levels, urban sprawl boundaries, OS roadmaps and additional visual inspection. Orders where the postcode was invalid or omitted were excluded from the rural/urban analysis.
- A1.24 This was further segmented by using the “type of order field”, to provide a view of volumes and average days based on the type of provisioning event. To provide a more consumer friendly approach, this year we reduced the number of order type categories for Openreach providers. Specifically, we combined the three different types of order that

⁵ Some providers could only provide one field date, due to overwriting the field if changes were made.

⁶ It is assumed that the provision of the service before the committed date does not impact the customer in a negative way.

⁷ http://www.bluewavegeographics.com/images/LOCALE_Classification.pdf

relate to delivering a new service to a new customer (New line, Restart, Transfer) when reporting on 2017 data.

- A1.25 Separately, we have published information on the average time taken by Virgin Media to provide services by order type (quickstart self-install, engineer install and product change).⁸ Virgin Media has distinct order types reflecting its separate network and processes. To calculate the 'engineer install' order type, we combined information Virgin Media provided on three separate order types: 1-man existing install, 1-man new install and 2-man new install, to report a single heading for engineer install.
- A1.26 We also created an industry figure for average time taken to provide a service across providers and provisioning events using the approach taken in A1.22.
- A1.27 We excluded Plusnet from this analysis because they could not provide any postcode information.
- A1.28 Post Office had missing data for deliveries greater than 30 days. This was an anomaly when compared with other providers. We have therefore not reported on orders completed by the Post Office for this metric.

Metric iii): The percentage of landline and broadband orders completed within 7, 14, 21 and 28 days - urban and rural areas combined [provider-specific]

- A1.29 For this metric we have presented the time taken to provide a service (from the order date to the service activation date), within 1 week (7 calendar days), 2 weeks (14 calendar days), 3 weeks (21 calendar days) and 4 weeks (28 calendar days), as a percentage of the total number of orders. We combined providers' urban and rural data together for the purposes of this analysis because there was no material difference in results.
- A1.30 The providers we have reported on for this metric are: BT, EE, Sky, TalkTalk, and also Virgin Media and KCOM in separate tables. Virgin Media's data includes regrades not initiated by the customer and is not directly comparable to other providers' data.
- A1.31 We excluded Plusnet from this analysis because of anomalies with some of its data.
- A1.32 Post Office was excluded from this analysis for the reasons explained in A1.28 above.

Metric iv): Percentage of orders for landline and broadband services taking more than four weeks (28 days) and eight weeks (56 days) to provide [Aggregate using data for BT, EE, Sky, TalkTalk and Virgin Media]

- A1.33 This metric was calculated by taking the proportion of orders where the difference between the date orders were placed and the date the service was activated was greater than 28 and 56 calendar days, as a percentage of overall orders across BT, EE, Sky, TalkTalk, and Virgin Media.

⁸ We are able to report on product changes for Virgin Media in 2017 due to additional granularity in the data provided. This data includes regrades provided proactively (i.e. not initiated by the customer) and is not directly comparable to other providers' data. We have not reported on Virgin Media home moves in 2016 or 2017 and will explore this for future publications.

A1.34 Post Office and Plusnet were excluded from this analysis for the reasons explained in A1.28 and A1.31 above.

Metric v) The percentage of orders for new landline and broadband services where a fault is raised reporting that the overall service is not working, within the first eight working days from the day after the new service was provided [Aggregate using Openreach data for BT, EE, Plusnet, Post Office, Sky and TalkTalk]

A1.35 We obtained data from Openreach on the number of completed orders where a fault was raised, reporting that the overall service was not working, within the first eight working days after completion of the order for BT, EE, Plusnet, Post Office, Sky and Talk Talk. These are otherwise known as orders that are “Dead on Arrival”. This metric does not include orders that are Dead on Arrival where the fault is not within Openreach’s domain, e.g. where a fault is caused by problems with in-home wiring or faulty routers provided to customers.

A1.36 The data is calculated by adding the number of Dead on Arrival orders (according to Openreach data⁹), as a percentage of the total number of provisioning orders for Openreach providers. This figure gives an indication of the number of orders that are delivered not working.

A1.37 Data from Virgin Media and KCOM did not allow us to accurately identify and reflect the services delivered Dead on Arrival, that would allow for meaningful comparisons.

Missed appointments (landline and fixed broadband services)

Metric vi): The percentage of appointments missed by workforce [Openreach providers aggregate and Virgin Media only]

A1.38 Ofcom requested that each fixed provider supply the total number of repair and provisioning appointments that were booked, the total number that were missed, and the total number that were missed *due to a customer* for each month in 2017. Key definitions were as follows:

- a) Provisioning appointments were defined as appointments for the provision of a residential fixed voice and/or fixed broadband service that has been made with a customer, and that requires a visit to the customer’s premises by an engineer or technician.¹⁰
- b) Repair appointments were defined as appointments for fault repair to a residential fixed voice and/or fixed broadband service that has been made with a customer, and that requires a visit to the customer’s premises by an engineer or technician.

⁹ Using the RIDs identified by each provider for their residential services.

¹⁰ These are referred to as installation appointments in the report.

- c) A 'missed appointment' was defined as an instance where an appointment is not kept, even if the appointment takes place on the same day outside of the agreed slot with the customer. If an appointment was rearranged prior to the calendar day on which it was originally agreed to take place, we specified that it should not be reported as 'missed' for our purposes.
- A1.39 To calculate the proportion of appointments missed for which the responsibility was that of Openreach (and not the customer), we first subtracted the number of Openreach appointments missed due to a customer from the total number of missed Openreach appointments and derived this as a percentage of total appointments booked with Openreach. We followed the same approach for Virgin Media. We report on the proportion of missed appointments for provisioning and the proportion of missed appointments for repairs.
- A1.40 Openreach records an appointment as missed if the engineer does not arrive within the specified slot or arrives earlier than the agreed slot without the agreement of the customer. We used the information supplied by providers on the Openreach network (BT, EE, Plusnet, Sky, and TalkTalk)¹¹ to calculate the total percentage of appointments missed by Openreach engineers in 2017 and for the calendar year as a whole.¹²
- A1.41 Virgin Media defines missed appointments differently to Openreach. In 2016, Virgin Media recorded installation and repair appointments as missed where the engineer did not arrive on the agreed date and an alternative slot could not be arranged on the same day (either earlier or later than the agreed slot). In 2017, Virgin Media changed the way they reported missed repair appointments (but not missed installation appointments), as they started to measure 'Arrival in Timeslot'. This meant that in 2017, a faults appointment would be recorded as missed if the engineer arrived outside of the agreed slot, even if they arrived on the agreed date. To maintain comparability with the reported figures in the 2016 report and the Virgin Media missed installation appointment figures, we asked Virgin Media to provide data on missed faults appointments in 2017 using their 2016 definition of 'missed'.
- A1.42 As the definitions of missed appointments used by Openreach and Virgin Media differ, a direct comparison cannot be made between the information supplied for this metric and we have not sought to draw one in the report.
- A1.43 Some providers on the Openreach network also use their own or third parties' workforces for provisioning or repair appointments. Although we asked Openreach providers to report separately on these, we were not able to publish separate missed appointment

¹¹ Post Office was unable to supply information on missed appointments in line with our requirements and their data was excluded from this analysis.

¹² There may be small differences between the metrics reported on here and Openreach's own data for 2017 because the information we are reporting only relates to the residential customers of the providers included within the scope of this report, and has been derived from data held by the retail providers rather than obtained directly from Openreach. We requested missed appointments data from Openreach and used it to carry out high level accuracy checks of the data we received from providers. We asked Openreach to split its data by Reseller Identification (RID) codes, and asked each provider to identify the RID codes they use for residential services, to ensure we were comparing data relating to the same set of appointments.

rates here. This was due to differences in the way appointments were defined as missed, which made it difficult to draw meaningful comparisons.

Metric vii): The percentage of appointments missed by customers [Openreach providers aggregate and Virgin Media only]

A1.44 We calculated two figures for the percentage of appointments missed by customers – one for customer missed appointments booked with Openreach¹³, and one for customer missed appointments on Virgin Media’s network.

A1.45 To calculate a rate of appointments missed for which the responsibility was the customer’s, we derived the total number of appointments missed due to a customer as a percentage of overall appointments booked. We report on the proportion of missed appointments for provisioning and the proportion of missed appointments for repairs.

Metric viii): Openreach service maintenance levels used for most residential customers [Openreach providers]

A1.46 We asked providers for the total number of residential subscribers on different Openreach service maintenance levels. Where a subscriber was on different maintenance levels for the same product, we asked providers to only count the highest maintenance level which that subscriber is on. We note that one working day is the basic service level for Fibre-to-the-Cabinet services.

Customer service metrics (fixed and mobile services)¹⁴

Metric ix): Overall average call waiting time [provider-specific]

A1.47 The overall average call waiting time is the overall mean time in seconds that customers spent in a call queue when they were waiting to get through to a call services agent on the contact system provided for new and existing residential fixed voice and fixed broadband customers, or for mobile customers. Where applicable, this includes calls made by those enquiring about or signing up to a new service.

A1.48 This is calculated by dividing the total time that new or existing customers who spoke to a call services agent after making an inbound call spent in the call queue during the specified time period, by the total number of inbound calls answered by call services agents in that time period. Transfers¹⁵ are treated as separate calls, with a separate call waiting time, and included in the metric, as they will involve a customer entering another call queue. Vodafone is excluded from the mobile metrics, as they were unable to include transfers in their data.

A1.49 The average waiting time for fixed services and for mobile services are calculated by dividing the total time that new or existing customers who spoke to a call services agent after making an inbound call spent in the call queue during the specified time period by the

¹³ This figure therefore excludes appointments with providers’ own or other third-party workforces.

¹⁴ The data requested here differed in 2017, and therefore may not be comparable with 2016.

¹⁵ A transfer describes when a customer is put through to an agent in a different department

total number of inbound calls answered by call services agents in that time period across each sector as a whole (landline & broadband, mobile). We used a standard rounding approach, i.e. anything below .5 was rounded down to the nearest whole number and anything at or above .5 was rounded up .

Metric x): The percentage of calls that ended while the customer was queuing to speak to an advisor [provider-specific]

- A1.50 For this metric, we asked providers to supply the overall number of occasions where a call was abandoned while the customer was in a call queue waiting to speak to a call services agent as a percentage of total occasions customers were waiting in a call queue. The figures presented are those supplied by providers in accordance with definitions specified by Ofcom. The metric includes instances where the customer hung up and instances where they were cut off, for example due to a technical issue. Call transfers are treated as separate calls, and therefore impact the figures. Vodafone is excluded from the mobile metrics, as they were unable to include call transfers in their data. Post Office is excluded from the landline metric as they could only provide data for customers abandoning the call themselves, which did not include instances of customers being cut off.
- A1.51 The average figure for fixed services and for mobile services are calculated by taking the overall number of occasions where a call ended while the customer was in a call queue waiting to speak to a call services agent as a percentage of total occasions customers were waiting in a call queue across each sector as a whole (landline & broadband, mobile). We used a standard rounding approach, i.e. anything below .5 was rounded down to the nearest whole number and anything at or above .5 was rounded up.

Customer service metrics (Business fixed services)

Metric xi): Contact channel used [aggregate using data for BT Business, TalkTalk Business, Virgin Media and XLN]

- A1.52 The threshold for the five providers to be included in the scope of our business information request was that they had the largest share of SME customers according to a recent Ofcom survey.¹⁶ We asked providers to specify the number of business contacts by channel (telephone, webchat, email/online contact form and letter). We calculated the proportion of business contacts that were made by phone across these providers by dividing the total number of phone contacts for each provider by the total number of business contacts for that provider. This was used to present a range across providers. We used the same approach to calculate the proportion of contacts by email, webchat and letter. Verastar was excluded as it could only provide data for part of the year.

¹⁶ Based on SME research from: Ofcom, 2017, [Narrowband Market Research review](#). See questions 7A and 8A for more information. The providers were BT, TalkTalk, Verastar, Virgin Media and XLN.