RESIDENTIAL STUDY

The main fieldwork for the residential study was conducted using a face-to-face approach, with fieldwork conducted by RED/ Quadrangle Operations. 2,084 interviews were conducted. This was supplemented by an online sample achieved through Research Now, to provide a more robust sample of those who use different suppliers for their landline and broadband. 200 such online interviews were conducted, along with 500 online interviews with those using the same suppliers for their landline and broadband, to allow data from the two sources to be standardised.

UK Geographics drew the main sample for this survey. Sample was selected using Output Areas (OAs) with quota controls (detailed below) to control the sample interviewed within each sampling point. The OAs in the UK were grouped into sampling units (SUs), and then stratified by region and rural/ urban. As the size of a SU is measured by the number of addresses it contains, the SUs would be selected with a probability proportionate to size. This ensures that all households have an equal chance of being selected, regardless of the size of the SU in which a household is situated. 12 interviews were conducted per SU. Interviewers were provided with specific addresses, with the average SU containing around 130 households in England and Wales and 160 households in Scotland, thus affording tight control over the addresses the interviewers called at.

Quotas are set within each SU to represent the population within that SU, while conforming to the overall national profile of the sample we wish to represent. In this case this would have been adults with a landline, except we wished to guarantee a reasonable level of coverage of one specific population – those without broadband, around 12% of those with landlines. As these are known to be older and C2DE, quotas were skewed to these groups to increase the non-broadband users in the sample from 12% to 13% of the face-to-face sample, and 10% of the total sample. This skew was corrected by weighting at the analysis stage. A summary of the calculations is as follows:

	Population	With Landline	Sample
16-24	14.1%	13.0%	11.4%
25-44	35.5%	34.6%	32.1%
45-64	30.1%	30.7%	29.5%
65-74	11.3%	12.1%	14.4%
75+	8.9%	9.7%	12.6%
AB	26.6%	28.7%	26.4%
C1	26.9%	27.2%	25.1%
C2	21.7%	21.9%	24.1%
DE	24.7%	22.1%	24.4%
Male	48.6%	48.5%	48.6%
Female	51.4%	51.4%	51.4%

The first stage of weighting takes targets from the 2017 Tech Tracker for those with a landline (as per above table) and weights the face-to-face sample to these targets; the following variables are used:

- Age
- Gender
- Socio-Economic grade
- Working status
- Nation & GOR (England)
- Urban/ rural

This would be the final weighting, except a boost of interviews was conducted online, covering all those with broadband but intentionally over-sampling those who use different suppliers for fixed line and broadband. Therefore, an extra stage of weighting was applied to (a) correct this oversampling and (b) correct for any obvious differences between the online and face-to-face sample. For those without broadband, the weights calculated above were used, for those with broadband the following process was followed.

The first stage was to weight the online sample to the same demographic profile as the face-to-face broadband users, using the above variables, and also to the profile of same supplier/ different supplier in the face-to-face sample. This means the two samples are now identical on all these variables, so the next stage is to compare across the questionnaire to see where there are substantial differences between the two. The biggest differences were found on the following variables:

QUESTION		Online	Face-to-Face
Q6. SHOWCARD How do you pay the line rental for your landline phone	In advance	13%	4%
Q18. Have you or your household ever changed the company that provides your fixed broadband service	Ever	62%	55%
Q24. In the last 12 months, have you tried to get any information about alternative landline providers or tariffs that you could use?	Yes	44%	20%
Q43. If the price of your total landline bill - not just the cost of calls - increased by 10%, so an extra £X each month, how likely would you be to change the way you make calls from home?	Any change	45%	27%

We managed to correct or at least greatly reduce these differences using just one further level of weighting, being the number of the above answers respondents gave – 0, 1, 2, 3/4. The following weights were applied:

Number of answers	Online	Face-to-face	Weight
None	17%	36%	2.16
One	36%	40%	1.08
Two	30%	18%	0.59
3-4	18%	5%	0.22

With these as initial weights for the online sample, the overall sample (of broadband users) was then weighted to the initial (broadband users) targets by demographics and same provider/ different provider, to determine final weights. This method of weighting retained high level of efficiency, with the following actual samples and ESS:

	Total	No broadband	Broadband	Different suppliers	Same suppliers
Unweighted total	2784	266	2518	282	2223
Effective Weighted Sample	2290	245	2046	226	1892
Efficiency	82%	92%	81%	80%	85%

SME STUDY

351 interviews were conducted with SMEs – defined as businesses with up to 249 employees. Interviews were conducted by telephone, with the person who has responsibility, either solely or jointly, for making decisions about the telecommunications devices and applications used in the organisation. The fieldwork was conducted by Critical Research.

Size of business was defined using the standard research question – "Including yourself, how many people does your organisation currently employ in the UK either full or part time?" – although this gives different results to the profile identified by the Government Statistical Service, the ONS. The ONS takes the definition of employee more narrowly, excluding those who work in the business (either self-employed or PAYE employees) if they are proprietors/ partners in the business. Thus, a business designated as zero-employee on the ONS database may actually have 1, 2, 3 or even more employees in response to the above question. However, we continued to use the definition used in the previous narrowband research for Ofcom, although questions were added which would allow us to align with the ONS were this required.

Sample was drawn from Dun & Bradstreet (via Sample Solutions, a sample broker), excluding only businesses with 250+ employees and any non-UK based businesses. Sample was structured by size of business, with a random sample of 5,250 taken. This overall sample was checked for alignment with broad UK region and known business sectors:

- Agriculture (SIC 1 - 9), Manufacturing (20 – 39), Construction 15-17) (28%)
- Transport: (40 – 48), retail (52 – 59), wholesale, (50 – 51) (28%)
- Finance and other services: (60 – 67 plus SICs 70 - 99) (44%)

Again for consistency with previous research, interviewing was not restricted to "registered" businesses, those who are either VAT registered or PAYE registered. Although those not registered account for the majority of SME (close to 60%) they are under-represented in business samples and so do not account for anything like this proportion of samples drawn. Questions were included to monitor this and allow registered and unregistered businesses to be covered specifically in future studies – 51 of the 347 interviews reported on were unregistered. The total is less than the 351 mentioned earlier as Ofcom decided to exclude 4 interviews with businesses using ISDN2 or ISDN30 but not landlines for voice calls.

At the analysis stage, respondents were weighted to the same profile as the previous narrowband study by size:

Business size (employees)	1	2-4	5-9	10-249
Interviewed sample	61	127	51	108
Weighted sample	71	203	38	35

Corrective weighting by sector or region was not considered necessary.

ISDN/ IP USER STUDY

350 business users of ISDN or IP services were interviewed, using an online business panel. Interviews were conducted with a person who has responsibility, either solely or jointly, for making decisions about the telecommunications devices and applications used in the organisation. Sample was drawn from Cint and Crowdology (via Viga to create a proprietary panel, given the relatively low incidence in the business market). The fieldwork was managed by Critical Research. Only panellists having decision making responsibilities, with profile information available for company size and industry sector were selected. Sample was drawn across the base, so no specific size criteria were applied. As far as we can tell, this closely replicates the approach used during the last narrowband review. As no size criteria were specified, results published – in line with those published during the last review – cannot be claimed to be representative of the installed base of ISDN/ IP services users.

The quotas applied were different to those applied in 2015. In that case, a total of 300 interviews were obtained, with quotas defined as:

- 100 x ISDN2/2E INTERVIEWS
- 100 x ISDN30 INTERVIEWS
- 100 x IP BASED SERVICES – but prioritising those who have switched from ISDN within the last three years

Due to interviews falling into more than one category, 150 interviews were achieved with IP service users, of which 100 had switched from ISDN services in the last three years, and 50 had not. The former included 33 still using ISDN, so (for example) who had switched ISDN2 lines but retained ISDN 30 as well as using IP services.

In 2017, the quotas applied during fieldwork were:

- 100 x ISDN2/2E INTERVIEWS
- 100 x ISDN30 INTERVIEWS
- 100 x IP BASED SERVICES WHO ALSO USE ISDN
- 100 x IP BASED SERVICES WHO DO NOT ALSO USE ISDN

The quotas applied are somewhat different, in particular the incidence of those using both ISDN and IP services is higher in 2017 (100 interviews) than in 2015 (50 interviews), with more focus in 2015 on those switching FROM ISDN. As a result, not all data will be comparable and one impact was that the profile of businesses by size interviewed in 2017 was somewhat different to 2015.

To compensate for this and try to make the comparison as fair as possible (without the benefit of raw data from 2015) we weighted the data as follows, according to the services used and company size:

	Sample profile	Weighted profile
IP services only	29%	33%
ISDN2 (not ISDN 30)		
1-9	3%	8%
20-49	3%	4%
50-249	6%	8%
250+	14%	6%
ISDN30		
1-9	3%	4%
20-49	4%	4%
50-249	10%	11%
250+	28%	22%

As mentioned, this weighting is only to provide comparability with 2015 and does not mean the sample represents the installed base of ISDN/IP services users. However, should further research be done with this market, we can reweight 2017 findings to represent the market accurately.