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Migration to digital landlines

Consumer attitudes and experiences of migration to Voice over Internet Protocol (VoIP) services in the Salisbury and Mildenhall Openreach trial areas

Welsh overview available

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Annex

1. Overview

This research document outlines our key findings from qualitative research in the Openreach trial areas of Mildenhall and Salisbury, which aimed to understand the experience of residential consumers being migrated to and using the new full-fibre and Voice over Internet Protocol (VoIP) services. This follows Openreach's announcement that it will withdraw wholesale services that support the provision of traditional landlines services (over the Public Switch Telephone Network (PSTN)) by December 2025, as well as, in parallel, the progressive phasing out of traditional landline services happening with the roll out of full-fibre broadband services.

The findings are based on qualitative research among 24 participants. Nineteen were retrospective interviews, i.e. interviews that took place after the move to full-fibre and / or VoIP, and five were longitudinal in-the-moment WhatsApp diaries, i.e. diary entries that recorded events at, or close to, the time they occurred.

What we have found – in brief

On the whole, the research indicates a low awareness of the migration to VoIP amongst participants. Many did not understand that the migration was happening, what it was, or the implications of the migration, for example that their phone service would be changing.

The low awareness of what the migration to full-fibre and VoIP would involve affected participants' expectations and experiences of the migration. Participants who migrated to a full-fibre broadband service and, as a result, also a VoIP landline (fibre migrators), often believed the full-fibre broadband installation would be similar to previous upgrades, home moves or supplier changes they had experienced in the past. Many fibre migrators did not fully understand what this service was or that a move to full-fibre would mean a change to their voice service too. This affected their expectations of the migration.

Some participants did not recall receiving information about the changes to their voice service or the level of work that would be required for the full-fibre installation. While it is possible that participants responding retrospectively may have forgotten these details, this was a consistent finding in the WhatsApp diaries too.

When issues arose, they tended to be regarding the visit from the engineer for the full-fibre installations and/or the functioning of the VoIP service (especially for the fibre migrators). The latter was not always an immediate issue for participants as very often the fibre migrators had not been aware that they needed to plug the phone into their router or that their phone was not functioning.

2. Background and objectives

Background

2.1 The way voice and data services are delivered to customers is undergoing significant change. The traditional Public Switch Telephone Network (PSTN) is old and becoming more expensive and difficult to maintain. As a result, it is being decommissioned, and traditional telephone services are being replaced with landline services delivered over broadband (also known as Voice over Internet Protocol or VoIP) to ensure our phone services continue into the future.

2.2 BT has announced it will close its PSTN by December 2025 and Virgin Media is working on a broadly similar timescale. In parallel with BT, Openreach has announced that it will stop selling new provisions of the wholesale services that support traditional landlines by September 2023 and withdraw those services altogether by December 2025. This means Communications Providers (CPs) reliant on those Openreach wholesale services to sell landline services must also migrate to VoIP services by December 2025. As of September 2021, we estimate that around 15% of landline services were using VoIP technology over broadband.[1]

2.3 In parallel with the migration of traditional landlines to VoIP, broadband services are also undertaking a transformation which affects traditional landlines. Openreach and many other providers are currently deploying new full-fibre or fibre-to-the-premise (FTTP) networks, which provide faster and more reliable broadband. The PSTN does not work on these new FTTP networks and as such, as consumers move to full-fibre broadband, they must also migrate to a VoIP service.

2.4 Eventually, broadband services will move to full-fibre and traditional, copper-based broadband services such as ADSL or fibre to the cabinet (FTTC) will be withdrawn;[2] this is known as “copper retirement”. PSTN switch-off is likely to progress at a faster pace than copper retirement, and for most areas copper retirement will take place some years after PSTN switch-off.

Objectives

2.5 Ofcom’s objective is to help ensure that customers are not subject to undue disruption and are protected from harm during the migration to VoIP. In 2019, Ofcom published expectations for how communications providers should support customers during this

[1] Ofcom, Connected Nations 2021: UK report.
[2] Asymmetric Digital Subscriber Line (ADSL) is a type of digital technology that allows the use of a standard telephone line to provide data communications to end users. ADSL allows higher speeds in one direction (towards the customer) than the other. FTTC uses very high speed digital subscriber line (VDSL) technology. Very high speed Digital Subscriber Line (VDSL) is a higher speed variant of DSL technology. Higher speeds are achieved by reducing the length of access copper line to the premises by deploying this technology in the access network in street cabinets.

migration.[3] Whilst for most customers the migration to VoIP should be straightforward, some customers may need additional support.

2.6 From December 2020, Openreach began trials in Salisbury and Mildenhall to migrate customers away from the PSTN.

2.7 In the Salisbury trial, most copper-based services are being retired. To achieve this, from December 2020, Openreach stopped selling new services based on the copper network. Therefore, since that date, new orders have been provided over the new full-fibre network, where full-fibre is available at the premises. This means that broadband and voice customers who want to upgrade, switch or move home have to do so over a full-fibre service. In addition, most existing copper-based services need to be migrated to full-fibre by April 2023. A key impact for consumers moving to full-fibre is that they will require an engineer visit to connect to the fibre network, alongside some new equipment to plug their landline into a router rather than a phone socket for the consequential VoIP installation.

2.8 In contrast, in Mildenhall, from May 2021 Openreach began trialling the withdrawal of the PSTN. Therefore, customers' voice services will be moved to VoIP, but the underlying connection will remain copper. For most of these customers, the main change will be to plug their landline into the router rather than the phone socket, and some new equipment such as a router or a new handset may be needed.

2.9 The aim of the trial is for Openreach and CPs to draw lessons from consumers' experiences of the migration to VoIP.[4]

2.10 We commissioned Jigsaw Research to undertake qualitative research in the trial areas to understand the experience of the residential consumers who are being migrated to the new products. The aim of the research was to explore consumer understanding, experiences and satisfaction with migration to VoIP and, where relevant, full-fibre services, which would, in turn, help inform Ofcom's programme of work.

[3] Ofcom, The future of fixed telephone services, 22 February 2019.
[4] Virgin Media are not taking part in the trials as they do not use the Openreach network.

3. Research method and sample

3.1 The original research methodology was to conduct qualitative research based on longitudinal[5] diaries using WhatsApp as the main participant interface, with qualitative in-depth interviews held before and after their migration journey. This approach was selected as a way of collecting insight into participants' experience in real-time, as participants would be asked to record all communications that they receive as they receive them. This would also allow the research agency (Jigsaw) to cross-reference what participants say against what was sent to them.

3.2 However, due to significant recruitment challenges, fewer longitudinal diaries were carried out than planned (see Table 1 for final achieved sample). These were supplemented by in-depth interviews with those who had migrated to VoIP and / or full-fibre, after the migration had happened (retrospective interviews).

3.3 The topics discussed with research participants included: their awareness of the trial / migration; reasons for migrating; expectations at the beginning of the process; experience at each stage of the process, and overall satisfaction with the process and service. A more detailed summary of the topic guide can be found in Annex 2.

3.4 The research did not specifically seek to include customers who have needs and / or characteristics that might make them vulnerable[6] in the context of the migration to VoIP, as we understood that in many cases consumers identified as vulnerable would not yet be migrated at the time the research was taking place.

Table 1 – sample structure

Research approach	Total
WhatsApp diary and depth interviews	5
Retrospective interviews (i.e. individual in-depth interviews)	19
Total	24

3.5 Fieldwork began in June 2021 and concluded in April 2022.

a) WhatsApp diary participants were recruited just before or after they confirmed their order for a new full-fibre / VoIP service. They kept a diary of all events experienced between placing their order and installation, sharing communications with Jigsaw, photos of equipment received and installations etc. The process lasted between one week to two months, depending on the speed of the migration.[7]

[5] This means we asked participants to record their migration journey over a period of time.
[6] This would include customers with a landline only connection, or who have registered with their CP as having a disability.
[7] Participants' reasons for migration to a VoIP service or full-fibre service included moving home, changing their broadband CP or changing the broadband service received by their current CP.

b) Retrospective interview participants were contacted as soon as possible after the installation took place. The average time between installation and interview was three months, but the distribution ranged from interviews taking place within the same month to 10 months later (see Annex 2, Figure 2 for a full timeline of when interviews took place after installation).

Analysis considerations

3.6 These findings are qualitative and therefore indicative. They are not necessarily representative of the majority of experiences but provide some useful evidence on where the migration process could be improved to provide a better experience for everyone.

3.7 It is worth noting that whilst we did cast the net as widely as possible to recruit a range of participants, the research is self-selecting, and therefore may have a bias in terms of those having 'something to say' (positively or negatively). Due to the gap between the interview and the migration, for our retrospective sample, we have to take into consideration that participants' responses may be subject to the 'peak-end rule'. This is a behavioural bias which results in a tendency to remember 'peak points' in an experience (whether a particular high or low)[8] and the 'end' of an experience. These points in the journey are likely to be more clearly recalled than other less impactful or memorable points.

3.8 In the analysis, therefore, we do not assume that if participants do not mention or recall an event, then it did not happen. We have attempted to mitigate these limitations through cross-referencing the findings from both the retrospective interviews and WhatsApp diaries where possible to build a picture of the migration journey of the participants.

[8] This includes 'bigger' events or those more relevant to the participant and their needs, compared to smaller / less impactful experiences or issues.

4. Key research findings

4.1 Our findings relate to two types of migrators to VoIP, those who move their landline to VoIP services, and those who also move to full-fibre broadband services. We refer to these participants in the following way:

a) VoIP-only migrators – these are customers who are migrating to a VoIP landline service only, and do not upgrade broadband at all[9] or do not upgrade broadband to full-fibre.

b) Fibre migrators – these are customers who are moving to a full-fibre broadband service, so will consequently need to be migrated on to a VoIP landline service at the same time if they are not already taking up a VoIP service.

4.2 Our research sample includes both fibre migrators and VoIP-only migrators (see Annex 2, Figure 1 for the full sample sizes; we interviewed 19 fibre migrators and five VoIP-only migrators). We report on both participants' migrations in the following section and draw out any differences in experiences where possible, although it is important to note that the number of participants migrating to VoIP only is very low, so this comparison is limited.

4.3 In Annex 1, there are case studies from the research which summarise the migration experience of a cross section of participants who took part.

Low awareness of VoIP and/or full-fibre affected participants' expectations of the migration

4.4 With the exception of a minority of participants, awareness of the migration to VoIP and full-fibre trials or plans for PSTN closure / copper retirement (as detailed in Section 2) tended to be low or superficial. Participants were often unaware of terms such as 'digital voice' or 'full-fibre'. 'Digital voice'[10] suggested some form of new service, but could also be misunderstood to mean a service they already had (e.g. cordless phone or a mobile phone). 'Full-fibre' was reported to suggest 'fast' fibre, but again, some participants felt that they already had 'superfast' broadband (FTTC), which they assumed was the same thing.

4.5 Fibre migrators were broadly ambivalent and leaning towards the positives of the move to full-fibre. There was a sense amongst fibre migrators that a faster service was in itself progress or a good thing, although this was not always felt to be personally necessary or worth any effort. These participants were generally happy with the service they currently had and believed that the causes of slow broadband lay more with the broadband providers rather than with the underlying copper infrastructure. Awareness of the migration to full-fibre was low among fibre migrators, as they often saw themselves as

[9] VoIP services can be delivered over the vast majority of ADSL or FTTC broadband connections, and therefore customers with existing broadband are unlikely to have to change their broadband just to migrate to VoIP.
[10] Another name for VoIP services.

upgrading a service rather than migrating to a new service. This meant their expectations of the migration were based on previous changes or upgrades.

4.6 Most participants' reaction to the migration to VoIP was that they did not know enough about VoIP to hold a view about whether it was good for them, and those that did express a view either did not see a personal benefit or questioned the need for change.

4.7 Some participants were aware of possible issues regarding VoIP not working during power-cuts. This was spontaneously mentioned, and the research cannot identify when or how participants became aware that power-cuts would affect the service.[11] Some more recent VoIP-only migrators were overall accepting of the migration to VoIP but were slightly annoyed at having something to add to their 'to-do' list.

Participants' relationship with the landline

4.8 Most research participants were ambivalent towards their landline (fixed voice service), with many stating that they never or rarely used it. Usage was generally out of habit, or to stay in touch with older relatives.

4.9 The participants' relationship with their landline did appear to influence their reaction to the migration to VoIP. Some expressed societal concerns for those more reliant on their landline who they felt would be more vulnerable during a power-cut. However, many participants had recently experienced, or seen reports of power-cuts and simultaneous mobile signal failure, which could have influenced their thinking.

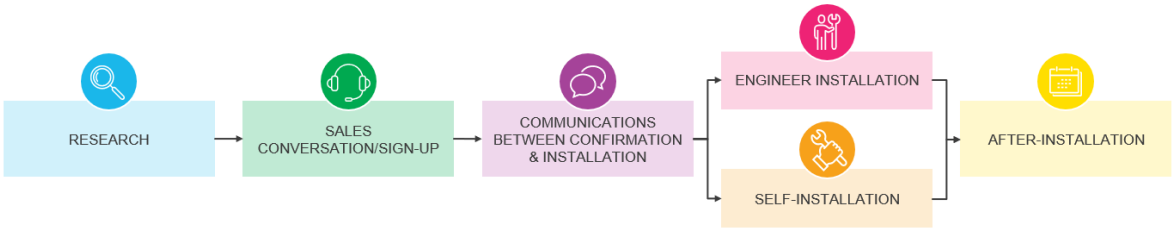
4.10 When they realised that their new phone line would not work during a power-cut, some participants did note that they may not have migrated had they known this, which suggests a degree of loss aversion[12] towards the PSTN. In practice, some of these participants had a cordless phone prior to the move to VoIP, which also would not work during a power-cut.

The process

4.11 The research found five stages that participants typically went through when migrating services that was both recalled in interviews or diarised by participants, shown below (Figure 1).

[11] It's important to note that many of the installations took place in November 2021 when Storm Arwen was taking place in the UK, which could have conflated the issue.
[12] 'Loss aversion' is a behavioural bias whereby the perceived value of something increases in the mind of a person when they are asked to 'trade it' or otherwise lose it and replace it with something new.

Figure 1: the five stages participants typically went through when migrating to VoIP / full-fibre



4.12 The level of initial research conducted by participants varied from more detailed internet searches, simply phoning their current supplier, or just asking some questions when buying a service. The majority of fibre migrators signed up through calling a CP – they were often calling to explore options rather than having decided in advance. In our research, VoIP-only migrators tended not to have an initial sales call or do any online research as they were contacted by their provider to migrate their landline and they were not changing their package or their provider.

4.13 The following sections discuss the key findings from the final four stages of the process in greater detail.

Sales conversation/sign-up

4.14 The sales stage refers to the moment of purchase for participants. In most cases, this was through a telephone call to the sales team, less often, it was online, and one participant purchased their service in-store.

4.15 The majority of participants considered themselves relatively satisfied with the sales call at the time, and that the sales representative explained the broad process and was able to answer most of their questions. However, when later reflecting on this stage of the process, some participants felt that they were not given full information about the changes that they were committing to. In particular, fibre migrators reported that they were not informed about the changes to their phone service from the PSTN to VoIP, and the physical changes that would be involved in the installation process. This included changes to the placement of sockets in their home, any drilling or mess that would be involved in the installation of full-fibre or needing to plug the phone into the router.

4.16 Some participants therefore reflected they had made a decision about migrating to a VoIP service without being given sufficient information to make an informed choice. In particular, after going through the process, participants later reflected that it would have been useful to know details beforehand about activating the VoIP service and that the service would not work during a power-cut (see 4.31). Whilst a minority of participants recalled the salesperson mentioning their phone service would change, most fibre migrators felt that there was more emphasis on the sales elements of the full-fibre broadband service than the VoIP changes. This, coupled with a lack of awareness beforehand, led many participants to expect the process to be similar to previous service changes or upgrades.

Communications between confirmation and installation

4.17 This stage refers to any communications that were sent from the provider to the participants between the sale / order and the installation. This typically comprised both emails and texts.

4.18 Overall, most participants felt satisfied with the level of contact they received from the CPs post-sign-up at the time. Many felt they received enough detail in a timely fashion to understand the process and what was required of them. It only became apparent that information was missed (or not recalled) at the installation stage.

4.19 A minority of participants complained about receiving too much information that looked like marketing or sales material, rather than functional information concerning the process specifically. Communications that were either not recalled by some participants, or were not received by some others, included the level of engineering work that would be required for fibre migrators, emails informing participants of a 48-hour notice[13] to set up their VoIP service or a reminder to plug their phone into the router.

4.20 In general, VoIP-only migrators tended to be more satisfied with the communications between confirmation and installation than fibre migrators, as they recalled being given more information about what the switch would entail.

Engineer installation or self-installation

4.21 In-person engineer visits were only required for fibre migrators, as they needed the fibre cable to be connected from outside to inside the house, and the full-fibre service enabled. This would involve, for instance, installing an external fibre termination box, drilling through a wall of the house, providing an internal box to enable the broadband connection, and/or running a cable within the house.[14] Once the fibre was installed, the new VoIP phone would need to be plugged into the router rather than the phone socket to receive a fixed voice service.

4.22 Most participants were happy with the engineer installation. A majority of participants mentioned that the engineer was on time, polite, tidy and that the full-fibre was working when they had finished the installation. A minority of participants mentioned issues related to general customer service (e.g. missed appointments, different subcontractors if more than one visit was required).

4.23 On reflection, some participants believed that the engineer could have informed them of the issues surrounding the changes to their phone service, as this only became apparent later; for example, that the phone would need to be plugged into the router, that the old

[13] The research suggests this two-day delay was a standard operating procedure in the migration process. Forty-eight hours was mentioned by some participants, others mentioned 1-2 days. This discrepancy was likely a result of recall, or it may be that 48 hours was the maximum wait time, whereas 1-2 days was more likely.
[14] For example, see Openreach's guide to full-fibre installation.

PSTN line would not work and that there would be a delay before the VoIP would start to work.

4.24 Perceived shortcomings with previous communications (as outlined in 4.15 and 4.16) were mentioned by participants as being apparent at this stage of the process. Both interview and diarist participants mentioned issues that they were previously unaware of or did not recall the level of work required, such as an in-person engineer visit being required, the new box needing to be installed in another room, or furniture needing to be moved.

4.25 The self-installation stage refers to the fibre migrators and VoIP-only migrators set-up of the VoIP service only, which would require plugging the phone into the router rather than the socket.

4.26 Most participants were satisfied with the self-installation of the VoIP service and were able to complete the process relatively easily. The majority of issues recalled were for fibre migrators who had their full-fibre service installed by an engineer and their attention was more focused on this service than VoIP throughout the process. Many did not realise that their phone needed switching, and / or were unaware that they should expect a delay of 1-2 days between receiving the equipment and the VoIP service going live. Once again, issues related to the self-installation often stemmed from the lack of awareness of the overall process among fibre migrators, as many had not realised they were required to plug their phone into the router to continue to use a landline.

4.27 Although based on a small number of interviews, there seemed to be fewer issues for participants who were migrating to VoIP only, as this was the only service they were migrating to. It is also important to note that as the majority of our sample were reflecting on their experience retrospectively, it is difficult to obtain a comprehensive view of what happened at self-installation or what information participants may have been sent.

Functioning of the service after installation

4.28 This final stage of the migration process refers to the extent that the services functioned after installation. It includes any calls made or issues participants may have had with their full-fibre or VoIP service.

4.29 The majority of participants were satisfied with their full-fibre service, which worked with few issues post-installation in almost all cases. For the most part, the fibre service was activated immediately (although delays were mentioned by a few participants).

4.30 However, as detailed above, some fibre migrators recalled more problems with their VoIP service functioning after installation (both diarists and interview participants), compared to the VoIP-only participants.

4.31 Some participants mentioned feeling anxious about the risk of power-cuts to their landline. Some participants mentioned that they were unconcerned their landline would not work

during a power-cut as they do not rely on it much, but even these participants mentioned that they had not been fully aware of this at sign-up.[15]

[15] As interviews are retrospective, this could be because the CP did not mention this, or because participants did not remember that the CP mentioned it.

5. Next steps

5.1 While the decision to migrate telephone services to IP has been led by industry, Ofcom wants to help ensure that customers are not subject to undue disruption during the migration. We will use the findings from this research as part of our monitoring of the migration.

5.2 As CPs' migration plans progress, we will continue to work with them and consumer groups to understand the needs of vulnerable consumers in particular, and to help ensure that critical services continue to work following migration. As part of this work, we are exploring potential areas for further research into customers' experiences of the migration to VoIP services.

A1. Case studies

Alice (WhatsApp diary)

Background

Alice is in her late 50s and lives with her husband. Alice had an illness a few years ago so she works part time. Alice feels that they have a decent grasp of technology and could probably manage basic tasks such a setting up a new phone or a new router but doesn't feel massively confident.

Alice decided to switch provider for her broadband and landline and eventually decided on a full-fibre service.

Expectations

Alice didn't really have many expectations for the next stage. The CP did not give her very much information upfront other than she would need an engineer to come out and set things up. They explained that they would be sending her more information about the migration at a later date, but she was not aware of the fact that she would need to migrate to IP / may need new equipment etc.

Process and installation

As part of the process Alice was sent information electronically. Unfortunately, Alice did not have the software to open it and when she asked for it to be posted she were told it was not possible for environmental reasons.

The engineer turned up within the designated time slot and was polite and professional.

However, the engineer made it clear that they only had 45 minutes to set up the new services. The engineer had to do a lot of work outside, needed Alice's husband to move furniture, and left a lot of mess, all of which caused worry and inconvenience.

The engineer then had to leave without connecting up the router and the phone, and they explained that Alice and her husband would need to do that themselves, without explaining how best to do that. Without instructions, Alice and her husband struggled to set up the phone properly. The phone stopped working after a power-cut and the CP found it hard to rectify the problem.

Overall review

Alice was disappointed by the migration process overall. Although she felt that the staff had been friendly and helpful, it had not been a smooth process and she felt information sharing could be better. She is unhappy that their landline is affected by power-cuts.

Jim (WhatsApp diary)

Background

Jim is in his late 70s and married with grown-up children. Jim is a knowledgeable and confident user of technology. He has broadband and, pre-migration, was not that satisfied with the speed he received. He was switched by his provider.

Expectations

Jim is very interested in technology, so he thinks he had more questions than most at the beginning of the migration. Jim understood that the migration meant that he was switching to 'internet calling'.

Process

Jim received a number of communications from his provider between first contact and the service going live. Jim did not need an engineer visit and set up his new phone successfully. However, there were still a number of issues.

Overall review

Overall, Jim felt that he was able to complete the process quite easily, although he believed other people of his age may struggle.

Specifically, he mentioned:

- That there was a long time between being first informed of the change and the switchover actually happening (five weeks).
- He felt the provider was trying to 'sell' the migration as an upgrade, but he's seen no improvement in his broadband service.
- The communications from the provider were mostly useful, but there were some things he thought could be improved:
  - A lot of the communications focused on broadband, so other people might have missed the VOIP aspects.
  - When he came to plug in the phone, it took a while to find where to put it (so instructions could have been clearer).
  - The Switchover Day email arrived after the switchover.
  - The adapter arrived after the switchover.

Katie (WhatsApp diary)

Background

Katie is in her late 30s, married, with two children and has a professional job.

Katie is a confident user of technology.

Katie's contract was finishing with her CP, and she had decided to switch to a different supplier for a faster broadband connection and minimal landline package.

Effectively, she believed that they would be sent a new router to plug into the phone socket. Katie had no expectations in terms of potentially needing a new phone or other changes needed.

Overall review

Overall, Katie was 'pretty happy' with the process, although there were some things that could have been better:

- She could not find any mention of the phone in the packaging or instructions she had received.
- The CP had not mentioned that they may need to move the socket to a new location, that the socket needed to be next to a double power socket, or that they would need a new box on the outside of the house, with wires running from roof to the box.
- On probing, it became apparent that Katie's landline phone was still plugged into the old socket. She realised at this point that she might need to plug it into the new router.
- However, Katie did not realise that her old phone (corded) would not work with the new set-up (Jigsaw told her). Neither the CP nor the engineer had told her about the need to plug the phone into the new router, or that her old phone would not work with it.
- She therefore felt that the CP missed out some important information in regards to the installation and the phone, which they should have made clear to her in advance. Overall, she was not that bothered as she wanted a new broadband and the landline phone was not that important to her, but Katie was a bit annoyed that her CP had not told her this information.

Gwynn (retrospective interview)

Background

Gwynn is in his late 30s and is married, with children. He has a technology-based job.

Given his job, Gwynn is quite tech-savvy and is confident with IT and communications in general.

Reasons for switching

Gwynn received an email from his CP saying he was out of contract. The email offered him a deal (cost-saving) if he extended his contract. He clicked on the link and signed up.

Expectations

Gwynn has upgraded a few times in the past so expected the process to be broadly the same. He didn't really expect to have to do much and didn't expect anything different.

Points of interest

Gwynn remembered being told that an engineer would visit, but given that he already had broadband, he thought that the 'visit' would be remote and they'd go to the cabinet not his house. He was therefore surprised when they actually turned up at his house. He was even more surprised when the engineer told him that they had to install a new socket in a different room and that there would be a lot of drilling involved.

Looking back, Gwynn remembered receiving quite a lot of communications from his CP but didn't really pay much attention to them. He was expecting a 'normal' process and the comms he did remember looked like 'marketing stuff', to the extent that he felt 'overloaded with texts' and ignored them.

Gwynn freely admits that he didn't pay much attention during the process and was rather embarrassed when the engineer turned up and he hadn't prepared for him.

> "I saw this email saying 19 November for your full-fibre broadband installation. I've already got full-fibre broadband so I ignored it."

Denise (retrospective interview)

Background

Denise is in her late 40s and lives with her husband and their two teenage boys. She works at home.

The internet is very important for the family, but the landline is used less and less these days. Denise generally relies on her husband and sons to help with new technology.

Reasons for switching

Denise was a VoIP-only migrator. She received a postcard from her CP in March to notify her of the required move from an 'analogue to digital' landline. She does not recall any mention of a migration date, or any other information about the new VOIP service.

Expectations

Initially, Denise and her family did not really engage with the postcard (or the subsequent text messages they received from her CP), and she didn't think too much about it. She didn't have any issues with the change to VOIP per se but did see it as a little inconvenient.

Points of interest

Denise understood that the migration to VoIP was mandatory but felt that this was just another thing to add to her 'to do' list.

Denise then recalls being sent text messages from her CP, and from a delivery company to say that the equipment would be delivered.

When the equipment did arrive, she put it in a cupboard as she felt she was too busy to deal with it. She then received more texts from her CP, asking her to install the new equipment. She then asked her husband to do this (approximately 2 weeks after the kit arrived).

They were surprised to find they'd been given a new router as they thought this switch to VOIP didn't involve broadband. As a result, the installation took a while.

Denise thought the self-installation had been satisfactory (although it wasn't as simple as anticipated), and that the new router had actually improved the Wi-Fi.

However, on reflection, she thought that the CP could have provided more information about what the switchover would entail and how long it would take, and more detailed instructions. She wasn't aware of any issues surrounding power-cuts and thinks that should be clearer.

> "I think at the time [of receiving the postcard] I was a bit blasé… I just put it to one side and didn't think too much about it…"

A2. Methodology

Recruitment approach

A2.1 Recruitment of the sample took place using a combination of methods including a sample being provided by communications providers (CPs) and free found activity.

A2.2 The CPs provided 17 participants for the research. The process of recruitment involved the CP initially sending an email to their customers informing them that this research was taking place and provided a link to Ofcom's website. Ofcom's website would then provide more details to the research and would link to a basic form on Jigsaw's website. Once a prospective respondent had completed this form, they would be contacted by FieldMouse (specialist recruitment agency), screened, and an interview would be set up with Jigsaw (the research agency).

A2.3 FieldMouse recruited the free found sample using a variety of approaches, including adverts on Facebook, joining local communities (e.g. Nextdoor), delivering postcards to targeted addresses and networking with local businesses. If someone responded to any of these approaches, they would be contacted by FieldMouse, screened and an interview would be set up with Jigsaw if they were suitable.

A2.4 Additionally, Ofcom supported the recruitment activity by placing advertisements in local press.

Figure 1: Full sample

Service migrated	Number of participants
VOIP only (managed migration)	5
Fibre (and VOIP)	19
Total	**24**

Location	Number of participants
Mildenhall	8
Salisbury	16
Total	**24**

Research approach	Number of participants
WhatsApp diary	5
Retrospective	19
Total	**24**

Gender	Number of participants
Female	12
Male	12
Total	**24**

Age	Number of participants
Under 40	7
40s-50s	7
60s-70s	10
Total	**24**

SEG	Number of participants
B	8
C1	9
C2	7
Total	**24**

Vulnerability	Number of participants
Vulnerable (recently had a stroke)	1
Not vulnerable	23
Total	**24**

Figure 2: Summary of when participants were interviewed after installation

	Within the same month	Within three months	After three months
Number of participants	8	14	2

Discussion guide

1. Preliminary interview

This interview was designed to understand the situation and context of the respondent before the process commenced.

- Introduction
- Respondent intros/context
- Planned changes
- Expectations of the process
- Explanation of diary stage

2. Diary task

This stage was designed to track all the touchpoints and issues related to the process of obtaining the new service from subscribing to installation. Participants would use a diary based on WhatsApp to record their experiences.

- Daily task
- Post installation task

3. End of migration interview

This interview was designed to enable us to review the entire process with the respondent. Participants would be asked to describe their experience in their own words – and we would use the diary to help job their memories.

- Introduction
- Current telecoms/broadband set-up
- Spontaneous experience review
- Detailed walkthrough
- Impact on use of the service usage in the future
- Overall summary

A3. Glossary

Term	Definition
ADSL	Asymmetric Digital Subscriber Line. Copper cables are used to connect from the exchange to the premises (also known as 'standard broadband').
CP	Communications Provider.
Copper-based services	Broadband services delivered on connections that wholly or partly use copper cables. In other words, broadband services that are not delivered over FTTP.
Copper retirement	Describes the process of copper-based broadband services being withdrawn and replaced with full-fibre services.
Digital voice	Another name for VoIP services.
Fibre migrator	Participants who migrated to a full-fibre broadband service and as a result also migrated to a VoIP service.
FTTC	Fibre to the cabinet, with copper cables used to connect from the cabinet to the premises. FTTC uses very high-speed digital subscriber line (VDSL) technology.
FTTP	Fibre to the Premises, also known as full-fibre. Services that provide a fibre optic cable from the exchange to the end user's home or office. In 2018 we have modified this definition to: where the network has been rolled out to a "lead-in" that will serve the consumer end premise and where the consumer would expect to pay a standard installation charge for that connection.
Full-fibre	Another way of describing Fibre to the Premises (see above).
IP	Internet Protocol. This is the packet data protocol used for routing and carrying data across the internet and similar networks.
Jigsaw	Market research company that conducted this research.
Openreach	Openreach Limited is a wholly owned subsidiary of BT Group. They are responsible for looking after the copper wires and fibre cables that connect UK homes and businesses to phone and broadband.
PSTN	Public Switched Telephone Network. The legacy telephone network that landline phones have traditionally been delivered over.

VoIP	Voice over Internet Protocol. A technology that allows users to send calls using internet protocol, using either the public internet or private IP networks.
VoIP-only migrator	Participants who only migrated their fixed voice service landline to a VoIP landline.