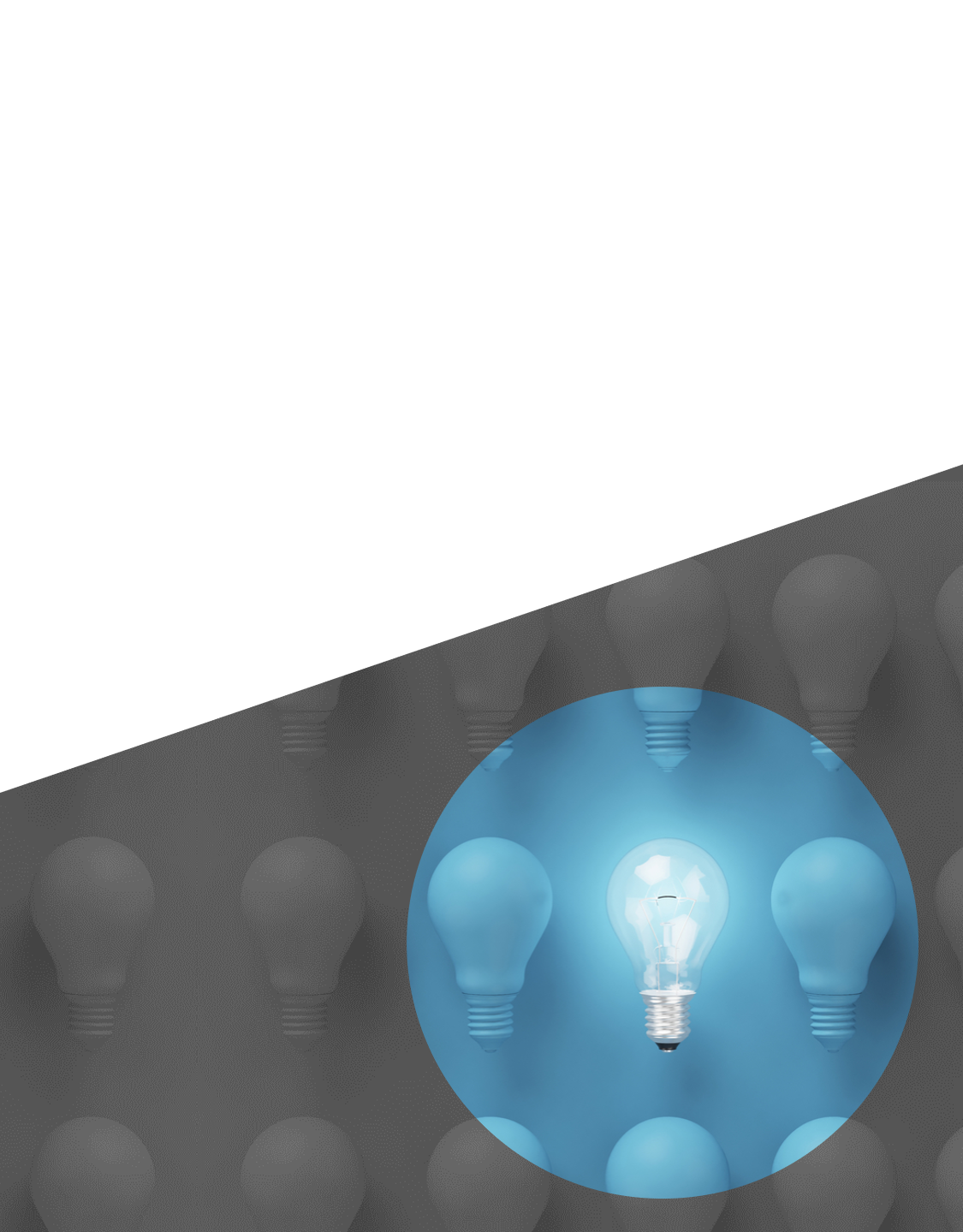
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| Impact of the VOIP switchover on vulnerable customers and businesses  **Research Report**  June 2021 |
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# Executive Summary

## 1.1 Key findings

Outlined below is a summary of the key findings that emerged from the research, followed by some potential implications for Ofcom, Communications Providers (CPs) and other organisations.

1. **Awareness of the VoIP switchover was generally very low, but more varied amongst expert businesses**

There was very low awareness of the switchover among both residential customers and businesses reliant on PSTN. There were bigger differences in awareness levels amongst ‘expert’ businesses - that is, those either selling and installing PSTN equipment, or businesses buying PSTN equipment on behalf of those most at risk:

* Some expert businesses already knew about the VoIP switchover and were already taking steps to be ready. This could include switching over existing customers to VoIP as well as stopping the sale of PSTN-reliant equipment;
* Other expert businesses were not yet aware of the switchover, and could be quite surprised and concerned about the planned changed to varying degrees:
  + Those that were already using VoIP technology (and not just PSTN) could feel fairly comfortable because they were already familiar with VoIP technology, and had a better understanding of what they might need to do;
  + Those that were only using PSTN technology were often most shocked and concerned as they were often less certain of the VoIP-equivalent products.

1. **Overall, most accepted the concept of the VoIP switchover as technological progress**

Overall, there was an ambivalent initial response to the switchover among residential customers and businesses reliant on PSTN.

Given the age of the landline network it seemed logical that changes to the network would happen at some point, and so it was seen as ‘progress’ by many. It was often likened to the digital TV switchover which took place in the early 2000s, which was typically seen as a straightforward process. Some respondents saw the switchover as having benefits to them personally and to the country overall. This was generally seen as an update to services, although some participants with a better understanding of technology could see more tangible benefits such as better call quality.

However other residential customers were less positive towards it. There was a degree of loss aversion among some, and some upset as to why a technology that they trusted and which worked well was being taken away. There seemed to be little reward for them (as consumers) for the effort they would have to expend to switch over.

1. **Consumers believed they understood what the VoIP switchover meant**

In its most simple form, the concept of switching from analogue to digital made sense to residential customers, including those most at risk, and businesses reliant on PSTN.

Some started to ask more questions as more information was revealed during the interview process, as they tried to understand what these changes meant for them.

However, some did not really have any further questions. This could be either those who were not very confident with technology, and who might not know what to ask, or those who were fairly confident with technology, for whom it was simply not worth worrying about.

Among expert businesses there was also considerable variability in terms of their response. Some questioned the reliability of VoIP technology compared to PSTN, while others saw that it could be better than PSTN for some technology such as telemetry. Others simply felt that they didn’t know enough about it to have a view.

1. **There were a number of factors that could increase or decrease the likely impact that the switchover could have on customers**

Throughout this project, participants differed significantly both in terms of likely impact and response to the switchover from PSTN to VoIP. Anticipated level of impact was often related to the type and nature of additional requirements that landline customers have. However, while having additional requirements often correlated with higher likely levels of impact, it did not always.

Potential higher impact was typically related to a range of factors:

* Age. Those over 65 being most at risk as they were more likely to be reliant on their landline, less likely to have broadband, and less likely to be confident with technology;
* Difficulty in conducting manual parts of the switchover process due to more severe disabilities;
* Difficulty in understanding the task due to cognitive issues such as memory loss
* Lack of confidence or engagement with technology (digital literacy);
* Level of complexity of home/office set-up;
* Limited support from friends and family;
* Greater reliance on the landline phone (both practical and emotional);
* Use of other PSTN reliant services such as care alarms
* Not having broadband services at home/the office.

The research suggests that those without broadband services are most likely to be impacted by the switchover. This is because they do not already have a router set up at home, and also because they tended to be least confident with technology and how the internet works.

1. **There was a wide variety of different types of landline set-up**

In practical terms, residential customers and businesses reliant on PSTN had a wide variety of set-ups in their homes and businesses. This ranged from the very simple to the much more complex, depending on different factors:

* The number and type of PSTN services being used;
* The location and placement of master sockets and power sockets;
* Whether customers were using extension sockets or extension cables

There were also some common themes too - most notably, the majority of residential and business customers were using cordless phones, and technology such as fax machines and text phones were becoming obsolete.

1. **Participants identified two key elements of the switchover, and felt they could manage most of it themselves with support from CPs and other providers**

When it came to managing the switchover, participants identified 2 key elements:

1. The switchover itself;
2. What happens after the switchover.

In terms of the switchover itself, most felt relatively confident that they could manage to do it themselves or with some help, usually from family or friends who lived locally. Most imagined that it is a relatively simple process and so not a big imposition. A minority of participants felt they would need an engineer to help them with the switchover.

The response to managing the switchover could be driven by a number of factors, most notably, the level of confidence and engagement with technology (which is often related to age); the type and extent of additional requirements a person had; and whether or not they had broadband at home already. But, regardless of how customers planned to approach the switchover, most would want to know they could ask the provider for help if it did not go to plan.

In terms of what happens after the switchover, participants envisaged there being a few different elements for them to consider, most notably around compatibility.

For phone handsets, there was considerable variation in how people thought they would check compatibility. Some felt they would check in advance, while others would buy a new VoIP-ready phone to be sure it worked when switched. Both these groups wanted to avoid a gap in their landline service. Conversely, some consumers would simply wait until the switchover happened before trying their old phone. Consumers largely accepted that it was their responsibility to source and pay for new handsets if required.

When it came to ensuring the compatibility of PSTN reliant equipment, the picture was more varied. Customers tended to think that checking the compatibility of a one-off purchases, or technology that did not include an ongoing service package, as their own responsibility. If their equipment had an ongoing service arrangement or was bought or installed by someone other than themselves, then they would expect this to be the responsibility of the provider of the service. For example, this could include care alarms provided by the local authority.

1. **The onus is firmly on the providers to initiate the switch and support customers to migrate**

There was a strong feeling among residential customers and businesses reliant on PSTN that the onus is firmly on the providers to initiate and inform customers about the switch and support customers when migrating, including providing routers and basic instructions for the switchover. Although most people felt they could manage the actual switch themselves, they often felt that it was their CP’s responsibility to guide them and offer support if they were to need it, both during and after the switchover. This could also include help with checking phone compatibility.

There was also an expectation that extra help would be provided to people who had additional access requirements. But it was also acknowledged that the CP does not always know who these customers are.

1. **There were a number of questions raised about the switchover during the research**

During the research a number of questions were raised across the different audiences. These questions have been collated below, and split into key themes (timescale; cost; reliability and performance; role of the provider; extension sockets; external rewiring; compatibility; impact of power cuts). These themes have been ordered by perceived overall importance to participants, and by how frequently they were asked.

| Theme | Questions related to the switchover process and what could happen after the switchover |
| --- | --- |
| 1.Timescale | * When is this going to happen in my area? * Will there be a timetable? * Can you opt out? * For expert businesses: How much notice will I have? Will they be informing the industry first? (trade shows) |
| 2. Cost | * Will I need to pay for a new router if I need one? * Will I be charged more if providers see this as an upgrade to the service? * Will I be charged more if I need faster broadband? * For non-internet users: will I need to pay for broadband even if I’m not using it? * Will I still need to pay for line rental? * Will I need to pay for new equipment? (phones and other PSTN equipment) * Will I need to pay for re-wiring of extension sockets? |
| 3. Reliability and performance | * Will this affect my internet speed/bandwidth? * Broadband/WIFI can be unreliable/patchy- will that now affect my landline and connected technologies? * Friends and family & buyers of PSTN: Will you have to reboot/reconnect the phone if the internet goes down? |
| 4. Role of the provider | * Will my provider tell me if I need a new router? * When will my provider contact me? * What kind of support will they offer? * For a few: Will I need to change provider? * For businesses reliant: How many routers will I need? One per phone line? * For expert businesses: Who will be informing me- if I’m not using the landline services directly? |
| 5. Extension sockets | * What are my options here? * What type of equipment can I buy to overcome this and avoid re-wiring? * What does ‘re-wiring’ look like/cost? * Can I use extension cables? * Why won’t they continue to work in the VoIP switchover? |
| 6. External rewiring / cabling | * Will this require any re-wiring to be conducted outside my property? * Will this require re-wiring inside my property- and will an engineer need to come to do this? * Will I have to pay for it? * For businesses reliant on PSTN: Will I be required to pay for external re-wiring? |
| 7. Compatibility | * Will there be a way to check compatibility of my equipment? * What would that involve? * For expert businesses: How many test labs will there be and will they be accessible? * How will I know that any new equipment I buy will work on the new system? |
| 8. Impact of power cuts | * Does this mean I might not be able to use my phone / other equipment in a power cut? * Is there a solution to overcome that issue? |

## 1.2 Implications

There are a number of potential implications arising from this research for Ofcom, Providers, and others, further details of which can be found in Section 7, the Conclusions and Recommendations section. A summary of these have been included below, based on the findings that emerged from the research.

**Wider implications:**

1. While most the respondents did not see the switch from PSTN to VoIP as particularly challenging, this research indicates that it has the potential to cause harm and disruption to more at-risk audiences. There are a number of types of harm that may be caused both during and after the switch including:
   * Customers may feel anxious if what is required of them is unclear;
   * The costs involved may inhibit uptake and use of the new technology involved;
   * Customers could experience stress if they struggle with technology and setting up new equipment;
   * Power cuts have the potential to disrupt services and cause worry.
2. Although participants are principally looking to CPs to guide them through the switchover, it was apparent from the findings emerging from the study that there is a clear role for Government and Ofcom in the switch from PSTN to VoIP. This could include the following:
   * Raising awareness of the switchover;
   * Ensuring the switchover is communicated well in advance, particularly for expert businesses that may require more preparation;
   * To create an agreed and understood VoIP-ready symbol or logo to aid consumers when buying new handsets and other equipment;
   * To provide protection for customers who will be new to the internet.

**Implications for Communications Providers (CPs)**

More immediate:

1. CPs will need toinform consumers of the switchover 12 months in advance to ensure there are no unwelcome surprises.
2. In terms of positioning, CPs should consider telling customers in simple terms why the changes are happening and what benefits they will provide to them and wider society in order to overcome any loss aversion in relation to the PSTN network.

Closer to the switchover:

1. CPs should then provide a more detailed explanation of the switch closer to the switch date in their area, ideally three to six months in advance.
2. CPs will need to keep explanations and instructions simple, to empower customers with clear directions for what should largely be a straightforward job. They should avoid jargon and technical language. For example, use phrases such as ‘landline service’ rather than PSTN.
3. CPs will need to ensure that customers understand what they can expect from their them in terms of provision of new routers and so forth, and what customers will be required to action themselves.

During and after the switchover period:

1. CPs will need to support customers through the switchover by making answers to FAQs available both online and via telephone. They should also provide a helpline and ensure customers know it is available.
2. CPs will need to provide a database of VoIP-compatible products online, and equivalent information via the helpline so that customers can easily check whether their equipment is compatible before the switchover happens.
3. CPs should enlist other sources of authority and support for at-risk audiences in the endeavor, for example, charities, local authorities, social services.
4. CPs should provide information about requirements in relation to extension sockets. This should include information about the options available for wireless handsets or what re-wiring might involve and cost.
5. CPs will need to inform customers about the possibility of battery back-up and mobile network backup for devices and where to go to access them.
6. CPs will need to ensure those who have self-identified as vulnerable are communicated with directly and in accordance with their special needs. CPs may also consider targeting those over 65 years of age as this research has identified that they may be less confident with technology and, therefore, in need of support.
7. CPs will also need to let relevant customers know they can inform them if they live with conditions which may act as a barrier to their completing the switchover, and that they may be offered additional support, including the services of an engineer.

# Background and Approach

## 2.1 Background to the research

**The current UK Public Switched Telephone Network (PSTN) is reaching the end of its life and needs to be upgraded**. The current network is over 35 years old, and simply won’t be able to meet the demands placed on it in the future.

Work on this upgrade has been going on for a few years now, and **by 2025 all consumers will be migrated over to using Voice over Internet Protocol (VoIP) technology.** This means everybody using a standard PSTN landline, and anyone who has any technology connected to a landline, will need to switch over to the new digital network.

Whenever technology changes in a major way there’s a **risk that some people get left behind and that it could throw up practical problems and cause anxiety, stress and other harms.** This is where the Communications Consumer Panel (CCP) comes in. The Panel identified that some customers (both residential and business) who may have additional requirements could be adversely impacted by the switchover.

This could be driven by a number of factors: reliance on PSTN for certain services; lack of service during power outages; not having the right equipment in the home to switch easily; or simply not understanding what they need to do when the switchover happens.

Jigsaw Research was commissioned to undertake this piece of research to explore the likely impact of the switchover to VoIP on these audiences, to ensure that customers are supported through the switchover process (by communications providers and other relevant organisations), and to make sure that no one is left behind in the next evolutionary step of the UK’s telecommunications infrastructure.

## 2.2 Research objectives

**The overarching objectives for this research included the following**:

1. To explore the needs of those customers that may have additional requirements and / or be most at risk when the changes to landlines services occur, so that sources of potential harm can be identified and mitigated against;
2. To explore the level of knowledge and confidence of those higher risk customers in their ability to carry out the switchover, and the level or type of support they may expect from communications providers (CPs) and other organisations;
3. To understand whether third parties such as family and friends assisting those with additional needs anticipate being able to support the migration as expected;
4. To understand the extent to which organisations selling/supporting/commissioning technology that is dependent on PSTN lines are aware of, and preparing for, the upcoming changes to landline services.

**More detailed research objectives also included exploring the following:**

1. **Current landline set-ups:** What do customers and businesses have in place in their home/office and what are the implications when it comes to switching?
2. **Views on how to check compatibility of current landline technology**: How would customers and businesses make sure any PSTN technologies continue to work, and levels of understanding / acceptability in relation to alternatives such as moving from a wired to a wireless telephone?
3. Views of appropriate alternatives for **emergency calling during a power-cut and willingness to use battery back-ups.**

## 2.3 Research approach and sample structure

### 2.3.1 Research approach

**This comprised** **46 in-depth interviews** across 6 different residential and business audiences (as detailed in section 2.3.2) and took place in March and April 2021.

Interviews were 45 minutes in length and all participants were given a choice as to the channel they would prefer to use to conduct the interview – using Zoom where possible, but offering telephone (or even pencil and paper) if they preferred.

All interviews followed a discussion guide agreed in advance with the CCP’s executive team. This topic guide covered the following areas of exploration: current landline set-ups; awareness of the switchover; response to the switchover and managing the switchover process.

**All participants were asked to complete a pre-task** exercise prior to attending the depth interview. This involved describing the landline services they, or the person they care for, had at home. For businesses, this either involved describing their office landline set-up, or the types of equipment they sell/manufacture or buy on behalf of those with additional requirements. Participants were given the option to write about their set-up, draw it or take photos, depending on what was easiest or most convenient for them.

**A second pre-task was also completed by 50% of those audiences using or reliant on landline services** (except businesses/organisations selling/manufacturing or buying PSTN equipment and services). This was to review a piece of stimulus that set out some basic information about the upcoming changes to landline services. Depending on respondent preferences, this was provided as an online video, an emailed PDF document, or as a printed document sent to participants by post.

For the other half of the sample, the same information was introduced during the interview. This was so that top of mind responses could be captured and compared with those who had longer to reflect.

It is worth noting that it was of utmost importance that the research did not leave any participant feeling concerned or worried about the planned changes. Moderators therefore reminded participants that they did not need to act yet and that they could contact their providers/Ofcom if they had further questions.

The discussion guide, pre-task exercise and stimulus used in this research can be found in the appendix section of this report.

### 2.3.2 Sample

The 46 depth interviews conducted covered 6 different residential and business audience types, as outlined below.

* **20 x Higher risk participants** living with a range of factors that may make them more vulnerable to the upcoming changes to the telephone system. This could be due to the increased likelihood that they would own equipment that is currently reliant on PSTN, did not currently have access to the internet, or would be less able to conduct independently some tasks linked to the switchover independently. For the purposes of the research, this specific audience was defined as:
  + Those over 75 years of age;
  + Those with physical disabilities (for example, issues with mobility, dexterity or with hearing, sight or speech);
  + Those with mental and cognitive disabilities (for example, issues with memory and learning, social skills or mental health);
  + The research also included 6 participants with no broadband internet at home and 8 with additional PSTN services beyond a telephone.
* **6 x Lower risk participants used as a control sample**. All participants in this segment were without additional needs (that is, mental, physical or cognitive disabilities). They were a mix of ages from 30s upwards.
* **5 x Family and friends** who were all assisting a person that may be more at risk of harm due to changes in the telephony system. The research included a mix of different types of factors that may make the person they were caring for more vulnerable to the changes (as outlined above).
* **5 x Businesses reliant on PSTN technology,** which included a mix of sole traders and micro-businesses using a mix of different PSTN technology.
* **5 x Businesses selling and/or installing PSTN technology.** This included a mix of small and medium businesses selling a mix of different types of PSTN technology.
* **5 x Businesses/organisations buying PSTN equipment on behalf of those with additional requirements.** This included a mix of different types of PSTN technology.

All three residential customer audiences, and the businesses that were reliant on PSTN technology, were recruited to be at least fairly reliant on their landline and/or another type of PSTN technology.

PSTN technology refers to a range of devices that work by being plugged into the (analogue) Public Switched Telephone Network, which is due to be replaced by a (digital) Internet Protocol (or IP) network. For example: certain types of care alarms, burglar alarms, fax machines, medical monitoring equipment, textphones, lift call buttons and telemetry.

As well as those outlined above, other quotas were imposed to ensure a good mix of participants by gender, age, SEG, type of PSTN service they were reliant on, selling or buying, and communications provider used. We also included small numbers of those without broadband services at home (six higher risk participants) and those with poor or no mobile signal.

Interviews were conducted across all nations in the UK and also across urban, suburban and rural locations.

A detailed sample structure is available in the appendix section of this report.

### 2.3.3 Signposting the different audiences

This report will signpost the different audiences where they are relevant. **For the most part, residential audiences and micro businesses reliant on PSTN technology will be the focus**. The phrase ‘residential audiences’ will refer to higher risk participants, the control sample participants and family and friends who are assisting a person that may be higher risk/have additional requirements.

**This report will refer to ‘expert businesses’ separately**. This refers to businesses selling or installing PSTN services and businesses and organisations buying on behalf of customers that have additional requirements.

Where there are clear differences between individual audiences, they have been explicitly described.

# Context: PSTN Set-up and Usage

## 3.1 Impact of the switchover

### 3.1.1 Factors

The research identified a number of factors that may increase or decrease the likely impact that the switchover will have on residential customers and businesses reliant on PSTN.

The anticipated level of impact is often related to the type and nature of additional requirements that landline customers may have. However, while having additional requirements often correlates with higher likely levels of impact, it does not always.

**Factors that could lead to higher impact included the following:**

* Age: customers over 65 years of age are most likely to be affected;
* A lack of confidence with technology (that is, they would not feel comfortable  
   with a relatively simple task such as setting up a new phone or TV);
* Low engagement with technology (that is, they are not particularly interested  
   in understanding or adopting new technology);
* Having more severe disabilities;
* Being more isolated and/or having limited support from family and friends;
* Being more reliant on their landline telephone service as their primary or sole means of communication;
* Having other PSTN-reliant services (such as a care alarm);
* Not having broadband services in their home/office.

**The research identified that those customers without the internet at home are most likely to be impacted by the switch.** There were a number of factors or characteristics identified that may increase the impact on customers that do not have broadband at home:

* They tended to be older;
* They tended to have more of a practical and emotional reliance on their landline. They had a certain sense of familiarity and habit towards their landline and therefore, making changes to the way the landline works may cause a level of upheaval;
* They tended to have much less understanding of and familiarity with the internet and mobile technology, and therefore the switchover could be seen as more of a step into the unknown;
* There was a sense that they would need to learn more from scratch when it comes to adopting the internet, including the ‘basic’ terminology and the essential devices involved, namely routers;
* Their homes were generally less ‘switchover ready’ – including where in the house the master socket is located and potential re-wiring needs;
* Additionally, a lack of broadband at home also meant that they might not have access to the internet as a source for fact-checking or for contacting their provider.

### 3.1.2 Reliance on landline telephones

All of the participants who took part in this research claimed to be at least ‘fairly reliant’ on their landline telephone. However, there seemed to be **a spectrum of actual, practical reliance on the landline service.** There is significant overlap with the factors that could contribute to landline reliance, and those that lead to higher potential impact as described above.

**Those that were more reliant on landline telephones tended to be:**

* 65 year of age and older;
* Lacking in confidence with technology;
* Less engaged and/or in interested in technology;
* More likely to have more severe disabilities;
* More cost sensitive, for example, making use of free evening/weekend calls;
* Those using their landline to make and receive (most of) their calls;
* Those who did not have a mobile phone, or were less confident in using it;
* Those who had poor mobile signal in their homes.

*“I have three friends I have known for nearly 50 years, so I talk to them on my [landline] phone, to see how they are doing. It’s been important in the past year, definitely.”*Female, higher risk participant, England

**Conversely, those that were *less* reliant on landline telephones tended to be:**

* Under 65 years of age;
* At least fairly confident with technology;
* At least fairly engaged and/or interested in technology;
* Less likely to have severe disabilities;
* Less cost-sensitive or using mobile packages that include inclusive minutes/texts;
* Happy to use their mobile phone for most of their calls;
* Using the landline to (occasionally) make calls only, rather than for other devices or services.

[On landline usage] *“It definitely has declined in the past couple of years. And at various points we have wondered whether there was any point in still having it, because I will always have my mobile. Most of my family ring me on my mobile now, and there’s all the messaging too. And you get a lot of nuisance calls on the landline nowadays. It’s mainly my husband who uses the landline because he’s not a mobile user. But I use my mobile quicker…”*Female, higher risk participant, Northern Ireland

For **businesses that were reliant on PSTN**, the level of reliance on their landline phones could depend on the type of work they did (for example, if they had customers calling to make appointments) and also whether staff members had access to mobile phones.

This research also found that there could be a sense of **emotional reliance on landline telephones across residential audiences.** There were a number of reasons for this, as outlined below:

* **Familiarity and habit:** The landline telephone has a long legacy. It has been in operation for as long as participants can remember and, thus, they reach for it because that’s what they have always done. It tended to be seen as very simple and easy to use, particularly in comparison to other types of technology such as laptops. Some participants stated that they had had the same telephone number for a long time, and that they appreciated the fact that people know that number and are able to contact them on it.
* **Reliability and trust:** Many participants felt that their landline was a very reliable service and that it had rarely (if ever) failed or let them down. There was also an acknowledgement that the landline is not affected by poor signal or reception in the same way that mobile phones can be. Some felt that older technology such as this had really stood the test of time, and was often less temperamental than some of the newer types of technology (such as broadband). A small number of participants had retained a corded phone as they felt that this type of phone was even more reliable, in that it would continue to work in the event of a power cut.
* **Comfort and reassurance:** The landline was typically seen as a reassuring connection between the participant and the outside world, even if only as a back-up to their mobile phone. Many had positive associations with their landline as a means of communication and there was a sense that conversations that took place using the landline were more relaxed as they were happening in the comfort of people’s own home. Some also relied on the landline to make ‘official’ calls (for example, to the doctor or the local council) as they thought that the landline was more reliable and not susceptible to signal problems. Some also had the feeling that the landline was more formal and official than using a mobile a mobile phone.

### 3.1.3 Case studies demonstrating the different levels of impact that the VoIP switchover may have

All case studies in this report have been labelled either low, medium or high impact, or a combination of low/medium or medium/high. This relates to the anticipated size of impact that the switchover may have on each individual. This was identified by the research, rather than by the individual.

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|  | **Case study 1: Low impact** ***‘*June’ is a higher risk participant in her late 60s. She lives in the rural outskirts of Belfast** |
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| **Profile**: Female, retired hairdresser. June is married with grown-up children. She has recently started to have falls and recognises that she will need to install a care alarm in future  **Set-up overview:** June frequently uses her landline, mainly out of habit. She has a handset in her living room where the main socket is, plus a wireless handset upstairs, but she increasingly relies on her mobile phone which she uses for WhatsApp in particular. She has broadband at home and is a regular user of the internet for shopping, and doing things like sorting out her family’s car insurance.  **The switchover:** June has no real concerns about the VoIP switchover. She recognises the need for progress and has few real issues with power cuts because she can rely on her mobile. Nevertheless, she lives on an exposed hill and the internet can be affected by weather. June is confident that she and her and husband would be able to plug the phone into the router (which they originally installed themselves) or that their children could help. She would be happy to replace the landline handsets if required, and would see it as an opportunity for an upgrade.  *“I do think I could do it [carry out the switch] if I had all the information laid out on a sheet in front of me”* | |
|  | **Case study 2: Medium impact ‘Terry’ is in his mid-40s and is a higher risk participant. He lives alone in the Scottish Borders.** |
|  | |
| **Profile**: Terry is unable to work because of Type 1 diabetes. He lives in supervised accommodation, in a flat. He has a girlfriend (who he’s currently shielding with) and parents who live nearby.  **Set-up overview:** Terry lives in a highly connected home. The landline master socket is in the sitting room, along with his landline phone, router and medicare alarm. He does use the landline phone, but his main phone is now the mobile.  **The switchover:** Terry has few challenges with the switchover process. He feels he would be able to follow instructions and has lots of support in life if help is required. He is more troubled with the issue of power cuts and the impact this would have on his medical alarm, which is essential support if he collapses because of his medical condition. He is reassured at the idea of battery back-up for routers and alarms that can use the mobile network. He has a good relationship with his local alarm provider so will contact them to discuss the switchover and the options involved.  *“The landline is almost like the ‘old faithful’ in my life… Mobiles aren’t always the most reliable. It’s always been there and it connects my other systems [medicare alarm] so it makes a big difference to me”* | |
|  | **Case study 3: High impact ‘Pat’ is in her late 60s, and lives in North Wales. She is a higher risk participant with no mobile phone and no internet at home.** |
| **Profile**: Pat is a retired widow, living alone. She is fairly independent but is restricted to her immediate local area because she is beginning to lose her short-term memory. She does have grown-up sons, but they live some distance away. From speaking to Pat, there is a sense that she is living a very simple, old-fashioned life, although she did not articulate this herself.  **Set-up overview:** Pat is entirely reliant on a single landline phone, plugged into the master socket in the hall with an extension cable running through to her sitting room. She does not have a mobile phone, and she does not have the internet at home- although her sons did have it when they were still living at home.  **The switchover:** The switchover would present significant challenges for Pat, including comprehension of what’s involved because of her low familiarity with routers and the internet. Therefore, the actual switchover could be difficult as she views the world of internet/broadband as largely alien and a source of mistrust, so organising and running her single communication channel through it is a concern for her. She does not have a back-up available if the internet fails.  *“I don’t want a charge for the internet. So where would I get a router from?”* | |

## 3.2 Landline set-ups

### 3.2.1 Variation in landline set-ups across audiences

The research found a **wide variety of different types of landline set-ups across residential audiences and businesses reliant on PSTN**. Set-ups ranged from the very simple and straightforward, to the more complex.

**The level of complexity of landline set-ups could depend on a number of factors:**

* The number of PSTN reliant devices plugged in to the landline;
* The type of PSTN service plugged in to the landline. That is, whether participants were using telephones only or other PSTN-reliant technology such as care alarms;
* The location of the master socket and whether there were power sockets close by;
  + For context, some participants were living in new-build properties which had been designed for modern living, with master sockets in more convenient locations
  + Meanwhile other participants were living in older properties with master sockets in the hallway or somewhere else that was less convenient. In such cases, some participants were reliant on extension cables to enable them to place their telephone in an area of their home that worked best for them
* Use of extension sockets in other rooms of the home.

**Set-ups tended to be slightly more complex for businesses that were reliant on PSTN**. This was because many of these businesses were operating on a slightly larger scale than residential customers and had more PSTN-reliant equipment. For context, these businesses could have up to 10 employees. Businesses reliant on PSTN also tended to be more reliant on broadband/WIFI services for devices such as printers and for general internet access.

Even though there was a lot of variation in landline set-ups, **there were also some common themes across audiences:**

* The majority of participants were using cordless extension phones requiring a power supply. Only a small number were using corded phones;
* While some did still have fax machines (particularly businesses that were reliant on PSTN), it seems that they are increasingly less relevant and many had started to phase them out completely;
* During the recruitment phase, it also came to light that textphones (phones developed for use by people who are deaf or hard of hearing) are also increasingly obsolete.

**Some PSTN reliant services were seen as more important than others, as outlined below.** N.B., this is based on a small number of interviews among people using PSTN-reliant technology other than landline telephones.

* **Care alarms** tended to be seen as most important for those participants using them, as they were thought to provide medical help and support at a time of need. That said, there was some variation in how respondents chose to use their care alarms. Some were wearing their care alarm pendant at all times, whilst others often forgot or chose not to wear it;
* **Medical monitoring devices** were seen as fairly important, but not usually crucial for emergencies in the same way that care alarms can be;
* **Burglar alarms** could be important for security and peace of mind, but some were only using them from time to time so they could be less important in that circumstance. Businesses that were reliant on PSTN could see them as more important overall, as they helped to protect and secure their business premises and equipment;
* **Fax machines** were often felt to be least important as they are largely obsolete nowadays, and are often only used out of habit (as referenced earlier in this report).

### 3.2.2 Case studies demonstrating the variation in landline set-ups across audiences

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|  | **Case study 4: Low impact ‘Steve’ is a low risk participant in the control sample. He lives in Scotland and has a relatively simple landline set-up at home** |
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| **Profile**: Male, early 30s and lives by himself in a small one-bedroom flat in Glasgow. The flat is part of an old tenement building with old wiring and as such the master socket is located in the hallway.  **Set-up overview:** Steve has a cordless phone and a router plugged into the master socket. They’re both plugged into a power supply. He does not really like the master socket is in the hallway because he does not use the hall and it looks untidy. He has thought about trying to move it but he’s not sure it’s worth the hassle. He has an extension socket in the main living area- with a second wireless phone which is the one he uses.  **Landline reliance:** He has a mobile but he relies on his landline to make calls (for work and to his family) as it is cheaper. He is a heavy user of WIFI as he is currently working from home, and plays a lot of video games online.  *“It’s just my landline phone really* [that he’d need to switch over]*. It’s just really my gran that calls me on it though”* | |
|  | **Case study 5: Medium/high impact** **‘Thomas’ is a higher risk participant in England. He has a fairly complex set-up involving a number of extension sockets** |
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| **Profile**: Male, 87 and lives in a flat in London with his partner. He has some hearing problems and both he and his partner have mobility issues and are prone to falls.  **Set-up overview:** Thomas has several phones, a router and a care alarm system set-up in his flat. The couple have 4 telephones in total- 3 cordless (requiring a power supply) and one corded- and they use extension sockets. They still have a corded phone for back-up as it does not rely on a mains power supply. Despite having mobile phones, Thomas feels more comfortable having landlines around their home so that they are always close. They also have a care alarm system, which was fitted by the local council in case of emergencies.  **Landline reliance:** Both Thomas and his partner have mobiles- and they mainly use those for incoming calls and when they leave the flat. But their preference is the landline because it’s more reliable.  *“I think I’m just more comfortable with it* [the landline]… *it’s less likely to have interference on the line…. And I’m quite an old-fashioned person like that”* | |
|  | **Case study 6: Medium impact ‘Pete’ runs a business in England that is reliant on PSTN technology. He has a fairly complex set-up in his office, involving a lot of equipment** |
| **Profile**: Pete is the director of a small, family-run property management company based in semi-urban South East England. There are four members of staff in total. The office is an outbuilding at his home.  **Set-up overview:** Pete uses phones, broadband and a fax machine in the office. They have three wireless phones (requiring power supplies), and one that is corded in the main reception area which plugs into the master socket. He does not use extension sockets. They also have a fax machine.  **Landline reliance:** The company is very reliant on landline phones as only the directors have work mobiles. Plus, all incoming calls (from tenants, etc.) come through the landline number, and are not redirected to mobiles. They are using the fax machine less and less these days.  [On landline phone usage]*: Yeah, it’s tenants, advisors…all calls… it could be anyone really”* | |
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# Overall response to the VoIP switchover

## 4.1 Awareness of the VoIP landline switchover

### 4.1.1 Awareness levels amongst residential customers and businesses reliant on PSTN technology

**The majority of residential customers and businesses reliant on PSTN had not heard about the VoIP landline switchover**. A small minority did mention that they had seen a lot of engineering work at a local cabinet, or had heard about the Fibre-to-the-Premises (FTTP) rollout that had been in the media, and wondered if they were related to the changes. For information, the FTTP rollout referenced above refers to Openreach’s Fibre Cities programme, with the aim of providing 32,000 homes and businesses per week with full Fibre-to-the-Premises broadband technology. Please visit Openreach’s website for more details: <https://www.openreach.com/news-and-opinion/articles/36-new-locations-will-benefit-from-our-future-proof-broadband-ov>

**Overall, there was a fairly ambivalent initial response to the idea of the switchover** for these audiences. Although participants were mostly unaware of the upcoming change, it did not tend to come as a surprise. The general perception was that the current network *was* old and therefore it made sense that there would need to be an upgrade. For some participants this could feel like quite an important change as it will affect the whole of the UK, and could lead them to wonder if they had missed an announcement.

### 4.1.2 Awareness of the VoIP switchover amongst expert businesses

**Awareness levels of the VoIP switchover varied among both businesses selling PSTN equipment and businesses/organisations buying PSTN equipment on behalf of those with additional requirements.**

**Some expert businesses were aware of the VoIP switchover.** Those that were aware tended to have made changes in preparation for the switchover: they had stopped selling/installing/ buying legacy PSTN equipment, and/or started to switch over their installed base.

Expert businesses that were aware of the switchover tended to have heard from the companies that were supplying their PSTN equipment. There was no mention of having heard about the switchover from communications providers (CPs).

**A slightly larger proportion of expert businesses had no knowledge of the switch at all.** The first time they had heard about it was when they were contacted to take part in this research.

**For some of these expert businesses, the news of the switchover could initially come as quite a shock**. Some were surprised that they had not heard of the switchover until now, and felt somewhat inadequate in that they had not managed to keep abreast of the news. It could seem like a lot of information to process in terms of what this meant to them/their business or organisation, and also their customers. It could also raise a lot of critical issues and concerns. These participants tended to be those that were mostly or solely selling/buying equipment that was PSTN-reliant, and might not be aware of, or familiar with, the VoIP alternative.

**For other expert businesses, the news of the switchover was not as much of a surprise.** For these participants, there was a sense that VoIP technology had been the direction of travel in relation to landline services for a few years, and they were more likely to be using VoIP technology to an extent already. In this circumstance, the switchover could potentially feel less daunting.

### 4.1.3 Case studies demonstrating the variation in awareness levels amongst expert businesses

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|  | **Case study 7: High impact ‘Jed’ is an expert business participant. He runs a micro business that sells and installs burglar alarms in Northern Ireland** |
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| **Profile**: Jed owns and runs his own business selling and installing PSTN compatible alarms for residential customers. He has 2 members of staff that help him with the installation side of the business. He has built his business over the years based on word of mouth and he really values his reputation.  **PSTN equipment sold and installed:** Jed’s company sells burglar alarms that rely on a landline connection and a power source. These particular alarms use sensors, and if they are triggered, the system puts out a call to the homeowner’s mobile and alerts them to the threat. Jed buys his equipment from a supplier that he has worked with for a number of years and he feels he has a good relationship with them.  **Awareness level and response:** Jed has no awareness of the VoIP switchover. He feels that it must be his fault that he didn’t know and that he’s ‘taken his eye of the ball’ and not kept up to date with the industry. He is concerned that he is selling/installing equipment that may become obsolete very soon and does not think that this looks very professional.  **Next steps:** Jed feels that he should contact his supplier as a first port of call, and that they will hopefully have some more information, and alternative products that he can offer to customers. He also plans to inform customers of the switch and thinks that he may need to offer fee adapted products to customers that have had the service less than a year. He is very concerned about maintaining relationships with customers and doing the ‘decent’ thing.  *“It’s concerning…I’m going to be fitting systems that are going to be obsolete you’re telling me here, potentially at the end of the year”* | |
|  | **Case study 8: Low/medium impact ‘Tim’ is an expert business participant. He runs a micro business that sells and installs security systems in South Wales** |
|  | |
| **Profile**: Tim runs his own business selling, installing and maintaining security systems for businesses and residential homes. He moved out of providing more basic alarms as Internet of Things (IoT) based systems became more popular. He now has around 200 customers in the local area.  **PSTN equipment sold and installed:** Tim stopped selling PSTN based systems when he was informed about the switchover by his suppliers. Since then, he has started selling systems which are broadband based and include 1 or 2 sim cards for further back-up. This service is more expensive because the customer has to pay for the mobile line.  **Awareness level and response:** Tim feels well prepared for the switchover. He has moved most of his customers over to the new digital system already. He normally tells customers about the switchover when he does their annual maintenance check. He would have liked to have seen more about the switchover on TV, as it would have made the conversations with customers a bit easier.  **Next steps:** Tim only has a few of his customers left to migrate over to the new system, so he feels well prepared and on top of everything. He feels that it was his duty and responsibility to inform his customers and to provide a solution. Although he’s totally on top of what needs to be done in relation to the products he sells, he’s not thought about what he has to do in his own office.  *“I was told about 2 years ago. So not long after I stopped selling PSTN equipment”*  *“I do feel some responsibility that I got to tell them [his customers] and keep an eye on them before they switch”* | |
|  | **Case study 9: High impact ‘Callum’ is an expert business participant. He is a Compliance Lead for a Borough Council in England** |
| **Profile**: Callum is a Compliance Lead for various safety related technology. He works for a medium sized Borough Council in Southern England. The council owns 6,500 properties, many of which are flats and high rises. The majority of tenants are elderly, and there are also some who are ill and disabled.  **PSTN equipment sold and installed:** Callum’s group is responsible for a number of different technologies including lifts, fire alarms and careline type services. All the properties have a fire alarm that is PSTN reliant and links direct to the Fire Brigade.  **Awareness level and response:** Callum’s response to hearing about the switchover was of surprise and concern. He has no prior knowledge of the switchover and had not heard about it from any of the parties he’d have expected to inform him about it, for example, other council departments, relevant outsource suppliers, and the Fire Brigade.  Callum’s immediate questions revolve around whether new equipment would be needed, the length of time it would take to fit all the new equipment, the cost of doing so. His biggest concern is around how it would be funded.  **Next steps:** Callum assumes that their outsourced supplier would manage and fit the equipment, but would need more detail about exactly what would be required before could decide exactly what to do.  Budget constraints would probably mean that they tackled each task in stages. For example, lift equipment may be replaced the first year, then fire alarm panels the next and so on.  *“We’d also have to do procurement… that doesn’t happen overnight, it might take many months just to get that done, just to get people you want to use. Thinking about it now, it’s going to be a bloody nightmare to be honest”* | |
|  | |

## 4.2 General response to the concept of VoIP switchover

### 4.2.1 Response to the switchover from residential customers and businesses reliant on PSTN technology

**Most participants across audiences were open to the idea of the VoIP switchover.** Generally, there was a sense that technology is always improving and that people need to keep up with any changes in the name of progress.

Participants often said that they had experienced other ‘upgrades’ over the years and many spontaneously made reference to the analogue to digital TV switchover in the early 2000s. In this example, many felt that the TV switchover was fairly straightforward, with little recall of any major challenges or disruption. For the most part, there is an expectation that the VoIP switchover will come with the same level of communications and support services as the TV switchover as it affects the whole of the UK.

*“I accept change and progress – you have to. That’s keeping up with the modern world”* Female, higher risk participant, Northern Ireland

*“I’m glad to see this happen in my lifetime”* Female, higher risk participant, England

**Some participants were also able to identify some potential benefits of the VoIP switchover.** They tended to articulate this as better ‘quality’ lines for voice calls, and/or faster WIFI speeds. This was particularly the case if they get FTTP and/or a better router during the switchover process. In addition, some also saw the switchover as overall modernisation of the UK, which could in turn benefit society more broadly.

**Although most participants did accept the switchover as technological progress, there could also be a degree of loss aversion, particularly among residential customers.** These participants had been using their current landline service for a number of years and felt that it was reliable. For them it did not make sense to adopt a new system, and it could feel wasteful to make current equipment obsolete if it still works.

**Some also believed that there would be little to no benefit in making the switch,** but that there would be at least some level of upheaval for the customer. There was some concern that the new VoIP system might not work as well as the current landline system, and that the switchover could end up costing them money. A small minority suggested that this switchover was only likely to benefit the Communications Providers (CPs), and not their customers.

*“it’s all about moving technology forward… and some people say ‘oh it’s progress’ but I say ‘well my phone has worked and I’ve had it 40 odd years, and it’s all been quite straightforward’… They’re pushing all these things but they don’t think* [about whether] *everyone wants it. It’s all expense, everything is working fine at the moment and I don’t need to do it”* Female, higher risk participant, Wales

### 4.2.2 Response to the switchover from expert businesses

Expert businesses were typically better informed about VoIP technology than residential customers and businesses reliant on PSTN. However, there was some considerable variability in terms of level of knowledge. N.B., these findings come from a small sample size.

**Some expert businesses questioned the reliability of VoIP technology compared to PSTN.**  These participants could worry about using broadband and/or WIFI and how it might affect certain types of equipment or services. The perception was that broadband and particularly WIFI can be unstable and could be ultimately less safe (for example, if used for lift call buttons).

**Other expert businesses could see VoIP as a better quality of technology compared to PSTN.**  The perception was that VoIP technology was more expensive and could have better, and more accurate results, particularly when it comes to health monitoring / telemetry equipment.

**Other expert businesses did not really have a point of view on VoIP technology.** This was typically because they did not know enough about the technology and how it worked. There tended to be more awareness of VoIP telephones and potentially less of other types of VoIP equipment.

## 4.3 Understanding the VoIP switchover

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| For context, moderators needed to educate almost all participants about the switchover during the research so that everyone who took part in the research was able to respond to the concept once they were better informed, and all had the same level of information.  To do this, participants were shown stimulus materials that explained the switchover in its most basic form. This included information about what the switchover was, why it was happening, and how this might affect customers.  Half the residential customers and businesses reliant on PSTN technology were given this stimulus in advance of the interview so that they had time to reflect on the information. The other half were shown the stimulus during the interview, as were all the expert business audiences. This enabled moderators to gain a sense of how participants responded when they were introduced to the stimulus, and how easy it was to understand.  Depending on preferences, stimulus was provided as an online video, an emailed PDF document, or as a printed document sent to participants in the post. Residential customers and businesses reliant on PSTN technology received one version of the stimulus, whereas the expert businesses received a more detailed version, explaining the possible implications for both them and their customers |

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In its most simple form, the **concept of switching from analogue to digital was understood and made sense to customers, including those most at risk of harm.** Unplugging equipment from the master socket and plugging it into the back of the router seemed simple enough for most. This level of understanding seemed to have been aided by the analogue-digital TV switchover in the early 2000s which participants often mentioned spontaneously as referenced above.

**Some participants started to raise questions about the switchover** once more information was revealed about the potential impact on customers, and once they had started to fully process what they might need to do.

For most, this was simply because they wanted to understand exactly what the switchover meant for them, but for others it seemed to be because they were confused or worried about the changes. There was also a sense that some people were just more predisposed to want to understand change and to want to ask questions.

*“What do I have to do? Where am I going to the equipment from? Am I going to have to go out and buy it? Who’s going to be able to guide me through unplugging things, rerouting things if something doesn’t work? Who’s going to be my contact?”* Business reliant on PSTN, England

**Other participants did not feel that they needed to ask questions about the switchover**. Some did not think to (or want to) question it. These participants tended to be less confident or engaged with technology and therefore did not necessarily want a more thorough explanation. It could also be that they were not expecting to have to carry out the switch themselves, and so did not think that they needed to engage with the detail personally.

Conversely, some of the most confident and engaged with technology did not question the information provided either. They typically thought it would be easy to carry out the switch and so simply did not have any questions or did not think it was worth worrying about.

*“I can’t really see how I’d have any questions, no. I’d just assume that the background work would have been done and that’s that*” Male, higher risk participant, Wales

### 4.3.2 Questions raised during the research

**During the research a number of questions were raised across the different audiences**. These questions related to what might happen during the actual switchover process and also what might happen after the switchover has taken place. These questions have been collated in the table below, and split into key themes (timescale, cost, reliability and performance, role of the provider, extension sockets, external rewiring, compatibility, and impact of power cuts).

These themes have been ordered by perceived overall importance to participants and how frequently they were asked.

For residential customers tended to have more questions about timelines, cost and performance. Businesses reliant on PSTN had similar questions, but could focus slightly more on performance than residential customers. Expert businesses were most concerned about timelines, how much notice they would be given, if they would be informed about the upcoming changes ahead of customers and the potential cost.

The questions asked within these themes are detailed in the table below.

| Theme | Questions related to the switchover process | Questions related to what happens after the switchover |
| --- | --- | --- |
| 1.Timescale | * When is this going to happen in my area? * Will there be a timetable? * Can you opt out? * For expert businesses: How much notice will I have? Will they be informing the industry first? (trade shows) |  |
| 2. Cost | * Will I need to pay for a new router if I need one? | * Will I be charged more if providers see this as an upgrade to the service? * Will I be charged more if I need faster broadband? * For non-internet users: will I need to pay for broadband even if I’m not using it? * Will I still need to pay for line rental? * Will I need to pay for new equipment? (phones and other PSTN equipment) * Will I need to pay for re-wiring of extension sockets? |
| 3. Reliability and performance |  | * Will this affect my internet speed/bandwidth? * Broadband/WIFI can be unreliable/patchy- will that now affect my landline and connected technologies? * For friends and family & buyers of PSTN: Will you have to reboot/reconnect the phone if the internet goes down? |
| 4. Role of the provider | * Will my provider tell me if I need a new router? * When will my provider contact me? * What kind of support will they offer? * For a few: Will I need to change provider? * For businesses reliant: How many routers will I need? One per phone line? * For expert businesses: Who will be informing me- if I’m not using the landline services directly? |  |
| 5. Extension sockets |  | * What are my options here? * What type of equipment can I buy to overcome this and avoid re-wiring? * What does ‘re-wiring’ look like/cost? * Can I use extension cables? * For some- why won’t they continue to work in the VoIP switchover? |
| 6. External rewiring / cabling | * Will this require any re-wiring to be conducted outside my property? * Will this require re-wiring inside my property- and will an engineer need to come in to do this? * Will I have to pay for it? * For businesses reliant on PSTN: Will I be required to pay for external re-wiring? |  |
| 7. Compatibility | * Will there be a way to check compatibility of my equipment? * What would that involve? * For expert businesses: How many test labs will there be and will they be accessible? | * How will I know that any new equipment I buy will work on the new system? |
| 8. Impact of power cuts |  | * Does this mean I might not be able to use my phone / other equipment in a power cut? * Is there a solution to overcome that issue? |

## 4.4 Response to specific elements of the switchover

### 4.4.1 Costs associated with the switchover

During the research, **a number of questions were raised relating to cost** and how much money customers and businesses might need to spend on the switchover. These questions could relate to the costs of equipment - that is, buying new and compatible phones. Or they could be related to the cost of broadband services and whether that was going to become more expensive once the switchover happens.

Despite it being raised as a question fairly often, **many participants did not see cost as a big issue.** This was largely because the majority of respondents were already paying for broadband services at home anyway, and so did not see this as a new expense. Those that already had broadband were also relatively open to the benefits of a better service and so felt that they would be willing to pay a little bit more, if it came at a reasonable price.

When it came to equipment, most thought that they did not have much that might need to be replaced, so did not foresee that being a big expense. Furthermore, the general feeling was that phones are relatively cheap anyway, and can easily be replaced without much consideration. Some even relished the idea of upgrading their phones to get better ones.

It was generally seen as customers’ responsibility to buy new phones if they needed them. But it could be more difficult to work out whose responsibility it was to replace other types of PSTN equipment such as care alarms. This is detailed in section 5 of the report.

*“It might just be the cost of a new phone- that’s it… That wouldn’t really trouble me to be honest”* Higher risk participant, England

**However, cost could be more of a concern for others.** Those that were most cost-sensitive tended to be older participants or those living on lower incomes, such as pensions and disability allowance. Some had other PSTN services and might not have been clear about who would be paying for those. Cost concerns could also relate to the possibility of re-wiring. Some also thought they would need to start paying for a broadband service if they were not currently an internet user.

There was also a sense among some that it was simply unfair that the switchover could cost customers money. The switchover was a change that was being imposed on consumers, potentially leaving them out of pocket despite the fact that their current set-up and equipment worked well.

There was no real sense that these anticipated costs would necessarily prevent customers from making the switch or continuing with their services, but the cost would likely be more of a burden for some than others.

*“If my extensions are no longer going to work, it looks as if I’m going to be paying for that…and as a pensioner with a set income, that’s an expense”* Female, higher risk participant, Wales

*“If it’s going to mean that my mum has to pay for broadband, which she’s never needed and will never need for anything else, that’s going to be an additional cost for the privilege of making a phone call or a couple of phone calls a day. I can see no end of problems…”* Family & Friends, England

### 4.4.2 Reliability of VoIP services

When thinking about the switch to using VoIP technology, some started to question the reliability and stability of using the internet and how that could impact on their services. There were two elements to this:

* **Impact on landline services:** Those that were currently using a router/WIFI were aware that it could be temperamental and ‘drop out’ and not work from time to time. The concern was that their landline services might also be subject to these performance issues, and that there could be unexpected gaps. This felt very different to their current landline services, which participants rarely seemed to have any issues with. This was potentially an issue for all audiences, but was typically only mentioned by those most confident or engaged with technology.
* **Impact on broadband/WIFI services:** Similarly, this was the idea that once you connect your landline services via your router, it will affect how your WIFI works. Some participants had concerns that their broadband might not be able to ‘power’ all of their equipment/devices, or that it would affect speeds, slowing down everything connected to it. On a practical level, some queried whether there would be enough ports to connect all devices to the router. This tended to be a bigger concern for heavy users of the internet or those with a number of devices that needed to connect to WIFI such as games consoles, smart speakers, CCTV, laptops and tablets.

### 4.4.3 Loss of Extension sockets

In the research, we showed participants stimulus that explained that once the switchover happens, existing extension sockets will cease to work. **A number of the participants were using extension sockets in other rooms of their home, and were reliant on them to varying degrees.**

Those that do not use the extension sockets often did not really see this as problematic and felt they would possibly just stop using them post-switchover. However, others wanted to find a solution so that they could continue using additional phones as they had been doing previously. Those that were more reliant on extension sockets tended to be those with health concerns that wanted to make sure they were always near a phone in case they needed help as well as those that could not rely on a mobile phone.

**For most, it was not immediately clear how they could overcome the issue of losing their extension sockets.** The stimulus shown to participants explained that they may need to either purchase new IP-ready cordless phones or re-wire.

Re-wiring their home felt like a big and costly job, and so was not considered a viable option for most people. Many were not aware that they could purchase IP-ready cordless phone systems that connect via WIFI without requiring an extension socket. However, when prompted, this generally felt like a reasonable proposition and would enable them to continue as before without much inconvenience.

*“So, what happens with my extensions? They won’t work? I’ve just decorated my bedroom so wouldn’t be thinking about re-wiring!* Male, higher risk participant, England

**Most did not question the reliability of IP-ready cordless phones -** that is, whether they would need to re-boot or re-set them if the internet failed, or how well they would work if they were some distance from the router.

For most, this is because they simply did not know enough about this type of phone and how they work. Most did not connect any problems they might currently have with their WIFI or broadband to the likely future performance of these cordless telephone handsets. But a minority did question whether an IP-ready cordless phone would be a good substitute for their PSTN landline because they sometimes experience problems with their broadband service.

### 4.4.4 Impact of power cuts

|  |
| --- |
| As outlined by Ofcom, power cuts may be an issue for customers switching to VoIP technology in the future as their services would be reliant on a router, requiring a power supply. This means that in the event of a power cut, their services may stop working. Using the current PSTN system, it would be possible to use a corded telephone that can be powered through the master socket alone and which would therefore not necessarily be affected by power cuts. For More information please see Ofcom’s website: [Will your landline telephone work during a power cut?](https://www.ofcom.org.uk/phones-telecoms-and-internet/advice-for-consumers/problems/landlines-and-power-cuts#:~:text=Many%20of%20us%20experience%20power,or%20problems%20with%20electricity%20lines.&text=According%20to%20Ofcom%20research%2C%20eight,if%20they're%20fully%20charged.) |

**During the research, most participants did not spontaneously raise the issue of power cuts** and the potential impact that they may have on the services. It was however, raised by moderators as a topic in order to understand how much of an issue this may be.

**Most believed that power cuts were not likely to cause major problems for them** and that at worst it would be an inconvenience. There were a number of reasons for this as follows:

* There was a general perception that power cuts tend not to happen very frequently, and that if they do, they are rectified fairly quickly. The main exception was for those in more rural and exposed areas;
* The majority were using cordless phones, which are not likely to work in the event of a power cut anyway as they rely on a power supply;
* Some felt they could live without their landline for a few hours, and in fact thought they would be more worried about their broadband being interrupted;
* Many could rely on a mobile phone for emergencies if the power was down

*“Power cuts never really happen anyway… I can’t remember the last time we had one”* Male, higher Risk participant, England

*“I’ve got my granny phone, my mobile. Aye, I’ve got that, I’ll just use that…*” Female, Higher risk participant, Scotland

**However, some thought that power cuts could pose more of an issue.** These participants tended to be more concerned about their health and were worried that they might need to make calls to family/doctors/emergency services. They might also have had a lack of alternative options - that is, theymight not have felt confident using a mobile phone or they may have had a poor mobile phone signal.Furthermore, they were more likely to be using additional PSTN services and might not have been aware whether that piece of equipment had a battery back-up in place.

For these participants, the thought of not being able to use their landline service during a power cut could be quite worrying and could leave them feeling cut-off, isolated and at risk. Those most concerned welcomed the idea of battery back-ups and felt that CPs should make it known to customers that these options are available without charge.

*“I no longer have that safety net. Yes, I’m diabetic and I’m well controlled but if something suddenly happens and I didn’t have that landline, what could I do?’”* Female, Higher risk participant, Wales

Some businesses reliant on PSTN technology were also worried about power cuts, but for more commercial reasons. For them, the impact of not being able to use their phones to contact customers or take bookings could have an impact both financially and practically. Again, battery back-ups were welcomed as a solution.

*“That will stress me out… and I’ll have to resort to using my mobile. That will be a frustration if that happens… that will be a real frustration for companies, ‘cause their staff are going to be like, ‘I need to ring a client’”* Business reliant on PSTN, England

# Managing the switchover

## 5.1 The two components of the switchover

Respondents – both consumer and business – believed there were two distinct elements to managing the switchover from PTSN to VoIP. First was the physical switchover. This involves unplugging equipment from the master socket – principally the landline phone – and plugging it into the router. The second element was about what happens after the switchover – that is, making sure all equipment works now that it is plugged into the router, and specifically that it is all VoIP-compatible.

### 5.1.1 The physical switchover

Most people felt confident that they would be able to manage the practicalities of the switchover, and could complete the unplugging and plugging-in of equipment themselves, or, for some, with the help of family or friends. Only a very few felt they would need professional help from an engineer.

**The majority thought that they would be able to carry out the switchover themselves** because they believed it to be a simple process of unplugging their landline phone from the master socket and plugging it into the router instead – an uncomplicated procedure, particularly if instructions to follow were provided by their CP.

The process held no concerns for control (lower risk) participants and reliant businesses, but it was also considered easy enough by many higher risk participants too. This was particularly true if they already had a router and were relatively tech-engaged, because of current smartphone or internet use. In many cases, these participants had plugged in and set-up their router themselves when they first installed broadband at home, and this past success had given them confidence when it came to the VoIP switchover.

**A smaller number of participants thought they would be able to manage the switchover with the help of others**. This group tended to include older consumers, particularly those without prior experience of the internet. Some of these consumers lived with a physical or cognitive challenge which would make the switchover more difficult – that is, that they might lack the dexterity needed to plug cables into the router.

In these cases, consumers felt they were able to call on someone in their support network, often someone they lived with such as their spouse or (adult) child, or someone living nearby like a neighbour or family member. They often imagined working together with their helper to effect the switchover.

*“Oh I think we’d be able to do this together – my daughter is very good with computers and I can follow instructions on what to plug in”* (Female, higher risk participant, England)

The people these participants thought they would turn to for help might not be expert, but they were often younger and therefore potentially more experienced with technology. One of the perceived advantages of the switchover was that the process was likely to be relatively simple, so consumers did not feel that getting help would be a major imposition on the part of the helper.

**A small minority of participants thought they would require the help of an engineer to carry out the switch for them**. This group tended to include those without a support network, or who felt the switchover was likely to be too challenging for their usual helpers. It also included those for whom the plugging-in process would require more than a landline phone – that is, those with another PSTN-dependent device such as a care alarm. It could also include those without prior experience of the internet and routers. Calling upon the help of a professional engineer could seem like the best solution for them, and something they believed it would be reasonable to ask their CP to provide given their circumstances.

### 5.1.2 Checking VoIP compatibility

When it comes to checking compatibility, consumers and reliant businesses fall into three broad camps:

1. **Those who wanted to check the compatibility of their existing equipment in advance of the switchover**, to ensure everything would be up and running immediately after the switch. Either they did not want a gap in their landline service or needed to ensure no gap occurred. In many cases, these participants were heavily reliant on their landline for communication or had other PSTN-reliant equipment, such as a care alarm, that they needed to work without interruption.

2. **Those who were prepared to replace their existing equipment with VoIP-ready technology before the change happens**. This was so that they would be ready but would not have to go through a process of compatibility-checking beforehand, which could seem to be time-consuming. Buying new VoIP-ready technology in advance was therefore a guaranteed means of ensuring there would be no break in service. In some instances, these participants had already assumed that their existing phones were unlikely to be compatible so this could be seen as an opportunity to upgrade and modernise their equipment.

3. **Those who were willing to wait for the switch and then test their current equipment**. Often these were participants who were less reliant on their landline phone and were confident that their mobile phone would be able to plug any gap in their landline phone service. In fact, in some cases, these participants realised they might discover their existing home phone did not work with VoIP after the switchover, and would see that as a signal to abandon their landline altogether and only use their mobile phone from then on.

Those that ultimately wanted to retain their landline phone and were comfortable to wait and see if their equipment continued to work after the switchover included:

* Participants who were fairly confident that their existing handsets would be VoIP compatible, often because they had replaced them recently. *“I bought a phone… recently, during the first lockdown and I’m pretty sure that’s going to be compatible…I could wait and see”* (Business reliant, Northern Ireland).
* Those that felt that replacing non-compatible handsets would be fairly straightforward, involving a quick trip to their local electrical retailer. Typically, they did not want to engage with the issue beforehand because remedial action (if required) was not thought to be difficult. *“There’s shops around that will sell them nowadays, even Asda”* (Higher risk participant, Scotland).

## 5.2 The process of checking phone compatibility

**In the case of existing handsets, participants expected that they would need help and guidance from CPs and manufacturers**. In terms of general guidance, participants thought it would be helpful for CPs to give some general rules of thumb on compatibility – for example, that phones over five years old would be likely to need replacing. They felt that it would also be useful to explain to people what they need to do if they discover their phones are not compatible, and what their options are when it comes to replacement.

**To aid checking at a more detailed level, many felt that the ideal would be the provision of a searchable database by CPs and/or manufacturers.** This database would be available online and would detail compatibility/non-compatibility by make and model of handset. Some said they would also like CPs and/or manufacturers to offer a helpline so that consumers can ring up and seek this information and advice. This service would be particularly important for people currently without internet access. There would also be an opportunity for retailers to help, so that people could return to the shop they bought their previous phone to get the advice they needed.

Other places where information could be usefully provided were thought to include libraries, Citizens’ Advice and local Talking Shop services.

## 5.3 Buying new VoIP-enabled phones

**As with checking compatibility, consumers and reliant businesses said they would welcome guidance and help when buying new handsets, from CPs, manufacturers and retailers**. At a general level, because most participants anticipated buying new phones equivalent to their old ones, they felt it would be useful to have an overview of the options, including about handsets which work wirelessly and which do not need to be plugged into extension sockets. Some general guidance on prices would also be helpful.

**Participants wanted new phones in shops to be clearly marked VoIP-ready**, with a symbol or logo, so that there would be no confusion about which new handsets are compatible and they would not have to seek the help of shop assistants in-store. Ideally, they felt VoIP-ready symbols should be introduced now to avoid consumers buying the wrong handsets.

## 5.4 Checking other PSTN equipment

When it came to checking the future compatibility of devices like fax machines, care alarms and burglar alarms, participants felt that responsibility for managing this process depended on who installed the original equipment.

**Equipment that participants have effectively installed themselves and where there is no ongoing service package was thought to be their own responsibility.** In other words, it was felt to be reasonable that they should check the future compatibility of their devices, and to organise and fund any replacement equipment required, in the same way they would their landline handset.

Similar to phone handsets, participants felt it would be useful to have an online database to consult as part of the checking process, though some wanted to be able to speak to an expert in the case of more complex or expensive devices. Some thought it would be helpful and courteous if the company that originally supplied them with the equipment were in touch to inform and advise.

**For devices where there is an ongoing service arrangement or which were originally purchased and installed for consumers by a third party, then participants felt responsibility for checking and mitigating against compatibility issues fell on the supplier of the equipment.** In many cases, this would be a care alarm installed by the council, social services or the NHS.

In this instance, consumers expected the provider to manage the whole process, including contacting them to inform them of the situation and whether or not their equipment needed replacing and then, if required, to organise the replacement and installation of new compatible equipment. Consumers also expected to be able to contact the provider themselves, especially if they had not heard from them and were worried about the switchover. This was particularly the case with care alarms where users needed peace of mind that their devices were being managed properly and that there would be no gap in service once the switchover was complete.

**Expectations in relation to costs were varied and dependent on the ongoing service or management plan involved:**

* If they paid the council a monthly fee for their device, they expected the monthly fee to cover the cost of any replacement device, though most felt a small increase in fees to be reasonable if required for the new equipment.
* If their device was provided and managed by a private company, most did not expect any new equipment to be covered by their current service agreement or warranty. Therefore, they might have to pay a one-off charge for new equipment or increased ongoing service charges.

Consumers felt that estimating the costs involved in new equipment was difficult because they did not know whether they would require a whole new piece of equipment, or an adaptor would be all that was needed. So, guidance here would be useful.

## 5.5 Expert businesses and managing the switchover

The perspective of expert businesses depended on whether they were already using VoIP equipment, and whether they were already aware of the switchover.

### 5.5.1 Businesses using VoIP reliant products and services who were aware of the switchover

These businesses generally felt confident and in control because they were already familiar with VoIP and taking steps to be fully ready when the switchover occurs. In many cases they were already communicating with customers who would be affected and migrating them to VoIP-ready equipment. New customers were only being sold VoIP-ready equipment and services. With these preparations in place, these participants felt that they just needed to monitor the date of the switchover in their area.

### 5.5.2 Businesses using VoIP reliant products and services who were unaware of the switchover

Although they were not aware of the changes, these businesses tended to feel more confident that they would manage the switch. As they were already using VoIP products, they were familiar with the technology and had more of an awareness of what would need to be done. For them, the key implications were that they would need to migrate any affected existing customers to VoIP-ready technology quickly, and that new customers would now need to be sold VoIP-ready equipment and services rather than PSTN equivalents.

*“The older systems, lift alarms or the emergency phone that is in the lift is based on analogue cabling, and there’s an awful lot of analogue cabling around so I suppose we’re making use of that existing infrastructure…but if we were putting in a new lift it would almost certainly be VoIP so that it could be integrated with the control systems [which use VoIP]. So, it’s moving away [from analogue] quite strongly…. And the reason for moving away is that new technology is coming along”* Expert business participant- organisation buying PSTN technology (in a healthcare setting)

“I can see us being extremely busy in the next couple of years! Trying to get round them all and change them all [customers that may need equipment to be upgraded to VoIP]” Expert business participant- business selling and installing PSTN technology

### 5.5.3 Businesses currently using only PSTN products and services who were unaware of the switchover

Some expert businesses were unaware of the switchover and were completely reliant on PSTN technology. These participants were often shocked by the news and concerned about the significant practical implications for their business. These included the need to:

* Source new VoIP-ready equipment to replace the PSTN equipment they currently sold and installed;
* Inform their existing customers of the changes and what will be involved;
* Migrate customers to new VoIP-enabled technology, if required.

How significant the implications were for these businesses depended on the size of their existing customer base, as well as the type of customer they typically served. Businesses with large numbers of affected customers – perhaps numbering in the thousands – were more anxious, particularly if those customers had additional needs and would not be able to install new equipment themselves. They foresaw a good deal of work (and costs) for their business, and many felt anxious that they had often only recently sold and installed equipment that was soon likely to be obsolete, and that this could cause awkwardness and a loss of reputation among their customers. There could also be some concern about timings, and how long they would have to make these changes before the switchover came into effect.

*“My first thoughts are for the people that I’ve fitted alarms for, and the hassle that I’m going to have when they ring up saying this isn’t working…and I can hardly say ‘I’m going to have to charge you for another box’…I’ll have to probably pay for that. So that’s my problem”* Expert business participant- business selling and installing PSTN technology

# Role of Communications Providers

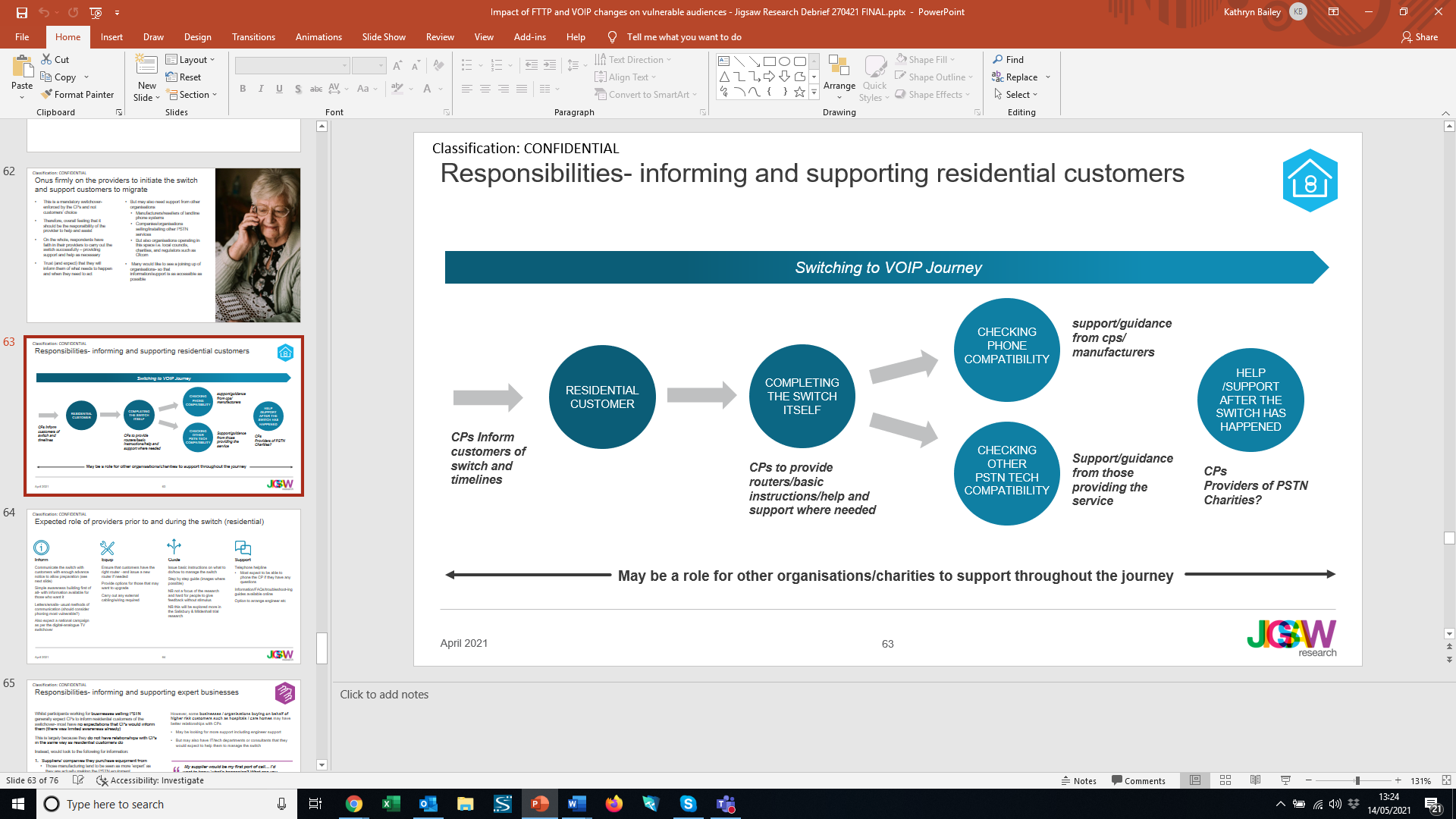
## 6.1 The overall responsibilities of Communications Providers

Residential customers and businesses reliant on PSTN were adamant that the bulk of responsibility for managing the switchover and ensuring that it is successful lies with the CPs. Although there may be some consumer benefits resulting from the changes, they felt that the overall switch is effectively being forced on them, so the onus was on CPs to ensure the switchover happens efficiently. In the first instance, this meant CPs were expected to inform customers of the changes and when they are happening, and to provide clear direction to customers on what they need to do in preparation.

However, although CPs were expected to lead the way with managing the changes, there was also a supporting role that they felt other organisations and bodies could usefully fill during the switchover. These included manufacturers and resellers of landline equipment; suppliers and installers of landline equipment; relevant organisations such as local authorities, charities, and regulators like Ofcom. Overall, it was felt that this was an opportunity for a coming-together of various organisations to ensure a smooth switchover process.

### 6.1.1 CPs’ responsibilities to residential customers before, during and after the switch to VoIP

CPs were felt to have a number of essential responsibilities in relation to the smooth transition of customers from PSTN to VoIP, in terms of providing them with information and guidance, the right equipment, and aftercare and ongoing support. The diagram below illustrates this, followed by further detail of the CPs expected responsibilities.



| Expectation of CPs before the switch | Expectation of CPs during and after the switch |
| --- | --- |
| Informing customers before the switch:   * Communicate that the switch is happening, with enough advance warning to enable customers to prepare   + An initial phase of awareness-building was expected in relation to the changes. Many anticipated a national campaign along the lines of the analogue-digital TV switchover some 15 years ago;   + Most felt that direct contact with customers should take the form of letters and emails from CPs, though telephone calls might be required for higher risk or more vulnerable customers. | **Guiding customers during the switch:**   * Issue instructions on what to do and how to do it, particularly in relation to moving landline phones from the master socket to the router. A step-by-step guide, with illustrations was required. |
| Equipping customers before the switch:   * Ensure that customers have the right equipment for the changes, principally a router; * Specific requirements would depend on the customer. For customers who already had a router, this would mean ensuring the existing device is the right one, and replacing it if it is not ready for the future; * For customers who did not have a router, this would mean supplying one for the first time. In either case, new routers were expected to be provided free of charge. Giving existing router owners options for upgrades would be helpful; * Conduct all other work outside the home to enable the changes, including any external cabling and wiring. Again, the expectation was that this work would be free of charge to the customer. | **Supporting customers during and after the switch:**   * Provide ongoing telephone helplines so that customers can contact CPs with questions throughout the switchover. It was felt to be important that these services continue after the switchover so that customers encountering ongoing problems with the switch or whose telephone or broadband are negatively affected had a means of getting issues corrected; * Provide online FAQs and troubleshooting guides to assist customers; * Ensuring the option to arrange an engineer for those who would prefer this route. |

### 6.1.2 The information and support needs of expert businesses

While residential consumers and businesses reliant on PSTN expected the support of CPs throughout the switchover journey, many expert businesses did not expect CPs to support them in the same way. In many cases, this was because they did not have a relationship with their CP in the way that consumers do. Instead, they would look to other sources of information and support, notably:

1. **Suppliers and resellers** of the equipment they use, because they have an existing relationship with these companies who have the expertise to provide the information and advice they will need;
2. **Industry bodies**, who were also identified by some as valuable sources of information, in trade magazines or at trade shows.

However, there were some businesses and organisations buying equipment on behalf of higher risk customers (for example, hospitals, care homes) who were likely to turn to CPs for help as they had a better relationship with them than other organisations. This was particularly the case for businesses who believed they would need the services of an engineer to make the necessary preparations for the switchover.

Some businesses had dedicated IT/tech departments or consultants, and they would expect these to manage the switchover in partnership with relevant outside organisations, including CPs and equipment suppliers.

## 6.2 Timing of communications involved in the switchover

The timing of communications about the switchover was thought to be highly important, but views on how far in advance of the switchover they should be deployed differed by audience. Overall, however, all audiences involved in the research did not want things left to the last minute. This was particularly important when it came to equipment: people did not want to buy new telephones, only to discover soon after that their kit would become obsolete as soon as the switchover happened in their area.

**For consumers**

Informing consumers of the switchover sooner rather than later was widely thought to be the best approach and was thought unlikely to cause anxiety even if the changes were some time away. For most, raising awareness and providing initial, general information on what was happening 12 months in advance was deemed appropriate. Providing more detailed information to those who want to seek it out at this time was felt to be helpful. The key issue here was that CPs should not provide new cabling or equipment that would become redundant as soon as the switchover takes place.

Consumers wanted more detailed information, particularly around specific dates in the area involved, to be provided three to six months ahead of the switchover.

**For businesses reliant on PSTN**

Overall, the needs of businesses reliant on PSTN were similar to those of consumers in relation to the scheduling of information roll-out. However, among businesses with more complex set-ups and a large number of sites, more advanced notice from CPs was felt to be valuable.

**For expert businesses**

These businesses needed the most advanced warning, ideally within the next 12 months. This was because of the complexity of the work they might need to complete to prepare for the changes involved, particularly when they are providing equipment for vulnerable customers.

In the case of organisations buying equipment, they felt they needed time to assess the extent to which they might need to replace previously installed equipment. This was likely to involve significant budgetary decisions, as well as the practical planning required to migrate customers to VoIP-ready equipment.

In the case of sellers of equipment, they felt they needed time to check and potentially change significant parts of their inventory, as well as inform existing customers.

## 6.3 The challenge for CPs in identifying higher risk customers

Most higher risk customers had not shared information about their additional requirements with their CP. Often this was because they did not realise they had the option, or what the benefits to them would have been. However, once these were explained, particularly in relation to the forthcoming switchover, many welcomed the option being available. Nevertheless, there were some who did not regard themselves as ‘vulnerable’, either because they felt others were worse off than themselves, or because admitting to being ‘vulnerable’ gave the challenges they lived with too much importance in their lives. Potentially, there was a degree of embarrassment here for individuals.

People caring for friends or relations in higher risk categories were sometimes more aware of the possibility of informing CPs, or were more open to doing so. Individual carers were sometimes concerned that providing this information about the people they look after could make them open to exploitation in the form of scams, however. Organisations which buy PSTN equipment on behalf of vulnerable customers tended to be more aware and willing to inform CPs.

## 6.4 The potential role of Government and Ofcom

This research mainly looked at the role required of CPs in the switchover, because they were identified by respondents as the principal support required by consumers and many businesses. But it is also apparent from the findings emerging from the study that there is a clear role for Government and Ofcom in the switch from PSTN to VoIP. Principally this relates to the raising of awareness:

* To provide an overall galvanising role and to provide clear communication that the switchover is coming (similar to the switch from analogue to digital TV);
* To create an agreed and understood VoIP-ready symbol or logo to aid consumers when buying new handsets and other equipment;
* To reach out to expert businesses as soon as possible, to ensure they understand the changes and what they mean for them and their customers;
* To provide protection for customers who will be new to the internet when the switchover takes place, particularly in relation to charges for a service they are only using to make and receive phone calls.

# Conclusions and recommendations

## 7.1 The potential ‘harm’ and/or disruption of the switchover to certain audiences

While many people did not see the switch from PSTN to VoIP as particularly challenging, this research indicates that it has the potential to cause harm to more at-risk audiences, and at different stages of the switching journey. There are a number of types of harm that may be caused:

**Before and during the switch**

* Stress and anxiety, if what is required of consumers is unclear and explicit timings involved are not provided;
* The costs involved, which may inhibit uptake and use of the new technology involved:
  + Ongoing line rental and internet costs, particularly for those without prior experience of these is;
  + Re-wiring costs for those without the financial means to make the changes required, which may result in isolation and health and wellbeing issues;
  + The impact of costs on usage of carelines and other important PSTN equipment, potentially leading to emergency health problems;
  + The risk of wasting money, particularly when buying equipment which is not VoIP-compatible.

**Post-switch**

* Stress due to struggling with technology, particularly new routers if users are novices with these devices:
  + Experiencing problems with equipment, or being unaware that it is not working properly;
  + Being unable to problem-solve, for example if required to reboot their router if there is a problem with their internet connection;
* Power cuts and disruption of service: at-risk customers worry there may be a gap in their service if there is a power failure and they do not have battery back-up.

## 7.2 Improving the clarity of CP communications to consumers

Consumers suggested a number of issues that would ideally be covered in communications issued by CPs about the switchover.

**Timings**

* Inform consumers of the switchover in their area 12 months in advance to ensure there are no unwelcome surprises;
* Consider ‘drip feeding’ information to avoid information overload;
* Provide a more detailed explanation of the switch and what it requires of customers closer to the switch date in their area, ideally three to six months in advance;
* Provide reliant businesses with earlier warning than consumers to help them communicate with and manage their own customers.

**Tone and positioning**

* Consider telling customers in simple terms why the changes are happening and what benefits they will provide to them and wider society in order to overcome any loss aversion in relation to the PSTN network. Adopt the services of the Plain English Campaign to ‘Crystal Mark’ the communications;
* Keep explanations and instructions simple, to empower customers with clear directions for what should largely be a straightforward job:
  + Avoid jargon and technical language; for example, use phrases such as ‘landline service’ rather than PSTN; consider initially explaining VoIP with ‘telephone service using the internet’ to ensure clarity and meaning;
* Create a sense of scale and significance for the switchover – to encourage the understanding that the change is important and that customers need to take action, but nothing to cause alarm.

**Channels**

* Make answers to FAQs available both online and via telephone;
* Provide a helpline and ensure customers know it is available;
* Provide a database of VoIP-compatible products online, and equivalent information via the helpline.

**Clarity of role of different organisations to help customers**

* Ensure customers understand what they can expect from their CP (e.g. provision of new routers and any external wiring required) vs. what customers will be required to action themselves;
* Ensure customers who need help to complete what is required of them understand where they can access support;
* Enlist other sources of authority and support for at risk audiences in the endeavour – e.g. charities, local authorities, social services, Citizens’ Advice, primary healthcare services, etc.

**Costs**

* Seek to provide more guidance on potential costs for consumers when it comes to additional charges for, e.g., broadband services because these are currently opaque, particularly for people without prior internet experience;
* Investigate whether CPs can help fund specialist equipment or rewiring for most at risk or vulnerable audiences.

**Home and office needs**

* Provide information about requirements in relation to extension sockets when the switch takes place and about the options available for wireless handsets;
* Provide information about the possible requirement for rewiring and the necessary steps involved;
* Help customers navigate the challenges of checking compatibility of handsets and other devices, and direct them to resources and databases to help during this process.

**Post-switch**

* Inform customers about the possibility of battery back-up and mobile network backup for devices and where to go to access them;
* Ensure robust devices (e.g. routers) are made available to people who will struggle to reboot and restart them;
* Ensure helplines continue to operate after the switch has happened.

**For the most vulnerable**

* Offer special solutions for higher risk audiences, including those with financial constraints – for example, replacement handsets, engineer visits, etc.
* Ensure those who have self-identified as vulnerable are communicated with directly and in accordance with their special needs;

## 7.3 Reaching and meeting the needs of higher risk customers

**Raising awareness**

* Let relevant customers know they can inform CPs if they live with conditions which may act as a barrier to their completing the switchover
  + This is also the case with those people who are highly reliant on their landline for communication and/or other products/services and who will be vulnerable if there is an interruption to their service;
* Explain the availability and benefits of an engineer visit and the possibility of prioritising their case;
* Be careful with language used: avoid making customers feel they are incapable.

**Targeting those 65 and over**

* Recognise that they may be of an age which is less tech-savvy and confident (and they may also live with other challenges);
* Potentially, contact them separately to outline the dedicated support they can potentially make use of.

**Targeting those without internet**

* Recognise that the switchover will be particularly challenging for those without prior experience of routers and the internet;
* Where possible, contact them separately to explain the details of the switchover and the support available to them, including engineer visits;
* Enlist the help of supporters/proxies: explain to others the support available to non-internet consumers.

## 7.4. Support for business by CPs

**Reliant businesses**

* Use a similar approach to that taken with general consumers;
* Ensure information and instructions are clear and easy to follow – this is not necessarily a tech-expert audience;
* Tailor communications with relevant business information – e.g. guidance in relation to multiple phone lines or multiple sites;
  + Many businesses may have in-house tech experts but would nevertheless welcome the possibility of engineer support for particularly complex set-ups.

**Expert businesses selling PSTN**

* Assess needs of businesses carefully – they may be more likely to depend on information and guidance from suppliers or industry bodies rather than CPs;
* But raise overall awareness of the changes as soon as possible for this audience – a broader understanding of the scale and national significance of the switchover is therefore important.

**Expert businesses/organisations buying PSTN**

* Likely to depend largely on information and guidance from suppliers or industry bodies rather than CPs;
* But larger sites (e.g. care homes) may require CPs to provide engineering services, working in partnership with any in-house tech teams.

# Appendix

## 8.1 Background and Approach

The Communications Consumer Panel carries out research, provides advice and encourages Ofcom, Government, the EU, industry and others to look at issues through the eyes of customers, citizens and small businesses. The Panel pays particular attention to the needs of older people and people with disabilities, the needs of people in rural areas and people on low incomes, and the needs of small and micro businesses, which face many of the same problems as individual customers.

Jigsaw Research was commissioned to conduct the qualitative research which comprised of a programme of online and telephone qualitative research taking place in March and April 2021.

## 8.2 The Research Approach in detail

The qualitative research comprised 46 depth interviews with a range of residential customers and businesses.

### 8.2.1 Sample structure

There were 6 segments included in this piece of research. These are outlined below:

1. **20 x Higher risk participants** living with a range of factors that may make them more vulnerable to the upcoming changes to the telephone system. This could be due to the increased likelihood that they would own equipment that is currently reliant on PSTN, did not currently have access to the internet, or would be less able to conduct independently some tasks linked to the switchover independently. All were recruited to be at least fairly reliant on their landlines. The sample variation is detailed in the table below:

|  |  |
| --- | --- |
| Sample variable | Number in the sample |
| Type of disability / additional requirements. NB there was a lot of overlap i.e. some participants stated that they had a combination of physical, cognitive and mental disabilities | |
| Physical disability | 14 |
| Cognitive disability | 8 |
| Mental disability | 6 |
| Reliance on landline services | |
| Fax machine | 2 |
| Burglar alarm | 2 |
| Care alarm | 4 |
| Medicare device | 1 |
| Internet/broadband at home | |
| Broadband at home | 14 |
| No broadband at home | 6 |
| Mobile phone usage | |
| Good mobile phone coverage and/or confident and able to use it | 14 |
| Poor or no mobile coverage and/or not confident or able to use it | 6 |
| Age | |
| Under 65 | 10 |
| 65- 74 | 6 |
| 75 and over | 4 |
| Gender | |
| Male | 10 |
| Female | 10 |
| Nation |  |
| England | 7 |
| Wales | 4 |
| Scotland | 5 |
| Northern Ireland | 4 |

1. **6 x Lower risk participants used as a control sample**. All participants in this segment were without additional needs (that is, mental, physical or cognitive disabilities). They were a mix of ages from 30s upwards. They all had broadband at home.

|  |  |
| --- | --- |
| Sample variable | Number in the sample |
| Mobile phone usage | |
| Good mobile phone coverage and/or confident and able to use it | 4 |
| Poor or no mobile coverage and/or not confident or able to use it | 2 |
| Age | |
| 30-39 | 2 |
| 40-49 | 2 |
| 50- 64 | 2 |
| Gender | |
| Male | 3 |
| Female | 3 |
| Nation |  |
| England | 3 |
| Wales | 1 |
| Scotland | 1 |
| Northern Ireland | 1 |

1. **5 x Family and friends** who were all assisting a person that may be more at risk of harm due to changes in the telephony system. The research included a mix of different types of factors that may make the person they were caring for more vulnerable to the changes (as outlined above).

|  |  |
| --- | --- |
| Sample variable | Number in the sample |
| Type of disability / additional requirements. NB there was a lot of overlap i.e. some participants stated that they had a combination of physical, cognitive and mental disabilities | |
| Physical disability | 5 |
| Cognitive disability | 1 |
| Mental disability | 1 |
| Reliance on landline services | |
| Burglar alarm | 1 |
| Care alarm | 3 |
| Internet/broadband at home | |
| Broadband at home | 3 |
| No broadband at home | 2 |
| Mobile phone usage | |
| Good mobile phone coverage and/or confident and able to use it | 2 |
| Poor or no mobile coverage and/or not confident and able to use it | 3 |
| Age of person being supported | |
| Under 65 | 1 |
| 65- 74 | 1 |
| 75 and over | 3 |
| Gender of person being supported | |
| Male | 2 |
| Female | 3 |
| Nation |  |
| England | 2 |
| Wales | 1 |
| Scotland | 1 |
| Northern Ireland | 1 |

1. **5 x Businesses reliant on PSTN technology,** which included a mix of sole traders and micro-businesses using a mix of different PSTN technology.

|  |  |
| --- | --- |
| Sample variable | Number in the sample |
| Type of business | |
| Sole Trader | 1 |
| Micro business | 4 |
| Area of business | 1 business development, 1 real estate, 1 engineering and plumbing, 1 cleaning services, 1 chiropractic services |
| Reliance on landline services | |
| Fax machine | 3 |
| Burglar alarm | 2 |
| Internet/broadband at home | |
| Broadband in the office | 5 |
| No broadband in the office | - |
| Mobile phone usage | |
| Good mobile phone coverage and/or confident and able to use it | 4 |
| Poor or no mobile coverage and/or not confident or able to use it | 1 |
| Nation |  |
| England | 2 |
| Wales | 1 |
| Scotland | 1 |
| Northern Ireland | 1 |

1. **5 x Businesses selling and/or installing PSTN technology.** This included a mix of small and medium businesses selling a mix of different types of PSTN technology.

|  |  |
| --- | --- |
| Sample variable | Number in the sample |
| Type of business | |
| Micro/small business | 4 |
| Small/medium business | 1 |
| Area of business | 1 telecoms, 1 lift maintenance and engineering, 1 retail shop selling disability equipment, 2 selling and installing alarm systems |
| Landline serviced sold/installed | |
| Fax machines | 1 |
| Burglar alarms | 2 |
| Lift call buttons/maintenance | 1 |
| Care alarms | 1 |
| Payment terminals | 1 |
| Technology used | |
| PSTN only | 2 |
| IP and PSTN | 3 |
| Internet/broadband at home | |
| Broadband in the office | 5 |
| No broadband in the office | - |
| Mobile phone usage | |
| Good mobile phone coverage and/or confident and able to use it | 4 |
| Poor or no mobile coverage and/or not confident or able to use it | 1 |
| Nation |  |
| England | 2 |
| Wales | 1 |
| Scotland | 1 |
| Northern Ireland | 1 |

1. **5 x Businesses or organisation buying PSTN reliant equipment on behalf of people with additional needs and requirements.** This included a mix of different types of PSTN technology.

|  |  |
| --- | --- |
| Sample variable | Number in the sample |
| Type of business | |
| Residential care | 2 |
| Local authorities | 2 |
| Health service/hospital | 1 |
| Landline services bought | |
| Care alarms | 5 |
| Medical monitoring devices | 2 |
| Burglar alarm | 4 |
| Lift call buttons | 3 |
| Telemetry | 1 |
| Nation |  |
| England | 2 |
| Wales | 1 |
| Scotland | 1 |
| Northern Ireland | 1 |

### The research also included a mix of urban, suburban and rural locations, and socio-economic group among the residential audience.

### 8.2.2 Pre-Tasks

All participants were asked to complete a pre-taskexercise prior to attending the depth interview. This involved describing the landline services they, or the person they care for, had at home. For businesses, this either involved describing their office landline set-up, or the types of equipment they sell/manufacture or buy on behalf of those with additional requirements. Participants were given the option to write about their set-up, draw it or take photos, depending on what was easiest or most convenient for them.

A second pre-task was also completed by 50% of those audiences using or reliant on landline services (except businesses/organisations selling/manufacturing or buying PSTN equipment and services). This was to review a piece of stimulus that set out some basic information about the upcoming changes to landline services. Depending on respondent preferences, this was provided as an online video, an emailed PDF document, or as a printed document sent to participants by post.

For the other half of the sample, the same information was introduced during the interview. This was so that top of mind responses could be captured and compared with those who had longer to reflect.

The pre-task exercise can be found overleaf.

### 8.2.3 In-depth interviews

The in-depth interviews were conducted across the UK from 12th March- 7th April 2021. They lasted up to 45 minutes each and were either conducted over Zoom, or over telephone depending on each participant’s preference.

### 8.2.4 Stimulus

In preparation for the in-depth interviews, stimulus was developed in conjunction with Ofcom and the CCP. This stimulus was either shared in advance as the 2nd element of the pre task (as outlined in 8.2.2), or it was shared by moderators during the depth interviews.

The stimulus was developed to set out some basic information about the upcoming changes to landline services and the possible impact on customers. Depending on respondent preferences, this was provided as an online video with a voice over, an emailed PDF document, or as a printed document sent to participants by post. There were different versions for residential customers and businesses reliant on PSTN. Expert businesses (businesses/organisations selling or buying PSTN equipment and services) were shown more detailed information as it was anticipated that they may have a better understanding of the technology involved.

The stimulus materials can be found overleaf.

### 8.2.5 Discussion Guide

Overleaf is the discussion guide used for the in-depth interviews.