BAPCO 2020

The Annual Event for Public Safety Technology

10 - 11 MARCH 2020
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Migration to All-IP Networks

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PSTN switch-off – recap

- Incumbent telephone companies have been looking to migrate from the traditional Public Switched Telephone Network (PSTN) for some time:
  - **the PSTN is becoming obsolescent**: lack of replacement parts, loss of expertise
  - **PSTN systems are being switched off across the world** (see Plum report for the Broadband Stakeholder Group for picture in France, Germany, Switzerland and New Zealand)
- The switch has already started, and is to be completed by **2025**
- There will be **different timings** depending on telephone company
- Replacement strategies are centred on '**Voice over Broadband**' (VoBB)
- With the near universal adoption of broadband for internet access and other services, this allows consolidation on a single access technology and will be the way forward in the UK**. In some cases, this bearer may be a wireless rather than a fixed line connection**

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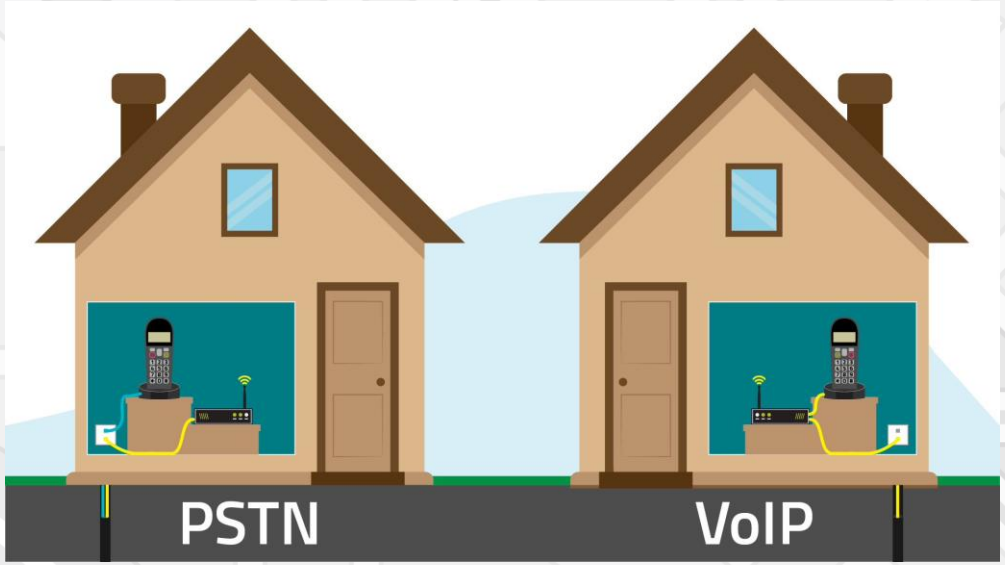
Impact on domestic and (most) business customers

- For many domestic and business customers, the only change will be to connect their existing handset(s) to a different socket
- Some customers – particularly those who are elderly, need a new broadband connection or have accessibility or disability requirements – may need additional support
- Most communications providers intend to invite customers to upgrade to new VoIP-based services on a voluntary basis
- Some final migrations may need to be compulsory, with sufficient warning



Impact on 'over-the-top' services – recap

VoBB will not necessarily support 'over-the-top' (OTT) services that rely on conventional end-to-end telephony

- Services that require 'baseband' connectivity such as Redcare, and related security applications, will cease to work
- Dual Tone Multi-Frequency (DTMF) tone based signalling will be affected in ways that may make some security applications and alarms malfunction
- Problems also extend to fax machines and other devices that use voiceband modems
- Problems already becoming evident with VoBB being used by some B2B providers and transit carriers (BT IPX), and the BSkyB/TalkTalk VoIP 'PSTN emulation'
  - May also extend to other security applications and will need service re-engineering and/or complete service/CPE replacement to rectify
- VoBB will also not have the 'line powering' capability of the PSTN – some applications and non-voice services will need **alternative power arrangements**
- Implications for range of domestic and business customers, as well as public sector users, including some organisations delivering **critical national infrastructure**
- Some communications providers offering **testing facilities** for downstream service providers to see if their equipment will continue to work effectively over VoIP – BT Digital Services Lab (contact: btdigitalvoice@bt.com) and Virgin Media Testing Lab (contact: IPvoice@virginmedia.co.uk). For other communications providers, we suggest contacting via usual channels

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This is an industry-led change

Migration is being led by the telephone companies, who are:

- Taking the decision to switch off the PSTN
- Setting the timescales
- Communicating with users and over-the-top service providers
- Ensuring particular focus on protecting vulnerable consumers
- Offering test facilities for over-the-top service equipment

Ofcom has a limited role:

- Using our formal powers to make sure that telephone companies comply with rules in the *General Conditions*
  - Our rules are technology neutral
  - This includes rules to ensure customers making calls over broadband are able to make emergency calls in the event of a power cut at their premises
- Ofcom is also setting out expectations of telephone companies to protect customers during migration, and using 'convening powers' to facilitate dialogue between industry, government and public bodies

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Ofcom work to date

- Connected Nations reports in 2016 and 2017 set out 'consumer protection principles' to apply during migration to mitigate risk of bad outcomes for consumers and businesses
- Since 2017 Ofcom has convened **'All IP' Working Groups** to share information and facilitate collaboration between communications providers, downstream service providers and other stakeholders including Government.
- In October 2018 we published guidance on how communications providers can continue to meet their obligation to ensure uninterrupted access to emergency organisations during a power outage for customers using VoIP technology
- Followed by a policy positioning statement in February 2019 setting out further expectations of telephone companies and providing an overview of All-IP work programme and working group structure
- In the transport sector, we have engaged with a number of stakeholders including DfT and ORR, and are working to further raise awareness within the road and traffic industry. **If you are aware of any specific stakeholders with whom we should engage, please let us know.**

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Other work/developments across industry

Openreach WLR withdrawal and PSTN switch-off trials – an opportunity for learning

- Trials taking place in Salisbury in Wiltshire (copper retirement trial) and Mildenhall in Suffolk (PSTN switch-off trial) started in January 2020 – both to be completed by Dec 2022
- General customer migration lessons
- Ensuring communications are effective
- What have we missed, particularly with regard to "corner cases" and CNI users?
- Ofcom is working closely with Openreach and other stakeholders and welcomes input
- See Openreach website and Ofcom consultation for further details

Broadband Stakeholder Group

- BSG is undertaking a similar role, i.e. to facilitate and coordinate the provision of consumer information for fibre and new Openreach services
- Focused on information sharing for consumers and small businesses – BSG Communications Working Group
- Intention is to provide an information hub on a neutrally branded website. Initial thinking:
  - Supported by sponsors
  - For consumers and small business only
  - For downstream service providers, e.g. directing to industry points of contact
  - Charity organisations

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What are the key take-aways for public safety organisations?

Services that are likely to be affected:

- Communications systems used in control centres/999 call handling centres
- Modems and alerting systems
- Embedded phones in walls/boxes, prison services
- Custodial tagging
- Remote or line-powered monitoring systems including in rural locations
- General support services
- **There may be others…**

Challenges of reaching end users

- Ensuring the message reaches end users at all levels

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What should end users and their suppliers be doing next?

- Establish if any services/technology rely on the PSTN or ISDN, and make sure you know **what and where these are**, whether they use the **PSTN's voice/or data capabilities**, and if they rely on **power through PSTN lines**. Investigate widely within your sector – be aware that not all services obviously relate to landline voice calls
- **End users should contact their communications provider(s)** to discuss timescales and the potential impact of the move to IP services on your business and networks
- **End users/service providers should contact their service and/or equipment suppliers, including contractors,** to see if they have conducted any testing or already offer alternatives that will work with VoIP services. Consider whether **equipment** needs to be **upgraded, re-configured or replaced** and plan appropriate action
- Consider whether it may be beneficial to schedule or **bring forward any necessary modifications/upgrades** in advance of the move to VoIP to build in optimum time to make changes
- Ensure that **other relevant customers, suppliers or stakeholders are aware of the change** and can begin engaging with their communications provider and suppliers
- Please let Ofcom know if you become aware of any additional services that could be affected by the change or if you have any issues engaging with your communications providers via our dedicated email address (FutureOfVoice@ofcom.org.uk)

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Thank you

Further questions/enquiries: FutureofVoice@ofcom.org.uk

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