The Problem:

There has been a lot of 'noise' in the market regarding BT Openreach's plans to switch off the Public Switched Telephony Network (PSTN) and Integrated Switched Digital Network (ISDN). In simple terms, the 'dial up' traditional networks used for making phone calls either from home or from business premises.

There has also been a lot of almost 'scaremongering' that this will start in 2020 and that SME's in the public sector and private sector will need to find rapid and expensive alternative solutions.

What is the actual current situation and what moving forward are your options when it comes to fixed telephony available to an enterprise in the public or private sector?

Services Affected:

The BT announcement will affect all services dependent on the PSTN Core network: . When the analogue network closes in 2025 these products will no longer be available.

The reality is that the equipment which runs the PSTN is ageing and will reach its end of life by December 2025. This means the analogue telephone voice services that are reliant on this network will no longer be available. the Key services are:

Public Switched Telephony Network (PSTN):

The PSTN allows worldwide calls to be made using analogue voice, utilising physical copper telephone lines for the vast majority of homes and small businesses. The PSTN has evolved from a network of fixed-line analogue telephone systems to an almost entirely digital network. In comparison, whilst the PSTN requires physical lines, IP telephony is all digital and requires an internet/cloud connection to be fully operational such as broadband or ethernet leased line.

Integrated Services Digital Network (ISDN):

The ISDN has been designed for the digital transmission of data and voice over ordinary copper wires and relies on the PSTN to work. ISDN enables customers to make phone calls while transmitting files and videoconferencing over 64kbps channels. There are two variants of ISDN: ISDN2 and ISDN30.

ISDN2 comes in two variants; ISDN Standard and ISDN System and can deliver two simultaneous 64kbps connections over a single line. ISDN30 offers speeds of 64kbps per channel from 8 to up to 30 channels per bearer.

Key Dates:

November 2017:   BT Group announced their intention to close the PSTN and ISDN in 2025

December 2018:   BT Openreach gave 5 years' formal notice of 'stop selling' new PSTN and ISDN lines

March 2020:   Commence first regional trials of alternatives to utilise the telephone wire for broadband and IP voice service (aka SOTAP) replacing the traditional dial up.

December 2020:   5 years' formal reminder of the PSTN and ISDN 'Switch-off'

September 2023:   Stop deployment of any **new** PSTN, ISDN2 and ISDN 30 lines

December 2025:   Entire PSTN and ISDN networks to be withdrawn as an available service

What does this actually mean to you?

The actual context of the PSTN and ISDN 'Switch off' to you at present is that it is 'business as usual' unless you are currently looking at replacing your existing telephony solution.

We would advise that you review all your options, don't be scare mongered into believing that the year of 2020 is a complete watershed for existing traditional telephony.

You have until September 2023 to evaluate whether you need additional traditional telephony lines for your sites until the 2025 end of service date. This includes new PSTN or ISDN line installations, conversion of existing analogue lines to ISDN and increasing the number of channels of an existing ISDN service.

There will be some exceptions to this 2023 date, where some specific regional areas will be utilised in trials for the end of PSTN and ISDN services. These will be very specific (For example the Salisbury area starting in 2020) where alternative technologies will be trialled for the PSTN/ISDN replacement services.

The alternative services will enable broadband data services to be the priority or only service across the copper or fibre connection to the home or business and add in some versions IP Voice transport functionality to the line. The replacement service on offer will be dependent on the access technology available to the specific building (ADSL direct from the carrier exchange, FTTC, GFast, FTTP or ethernet) and also if it is using the BT Openreach core infrastructure or a separate Communication providers core network.

However, there is a significant likelihood that you will be reviewing your current telephony solution over the next 3 years. Obviously, you will have to have plans in place before 2025, either to move to a pure IP Voice solution or an IP connectivity/transport solution for your existing investment. It is imperative that you understand your available options.

Your Telephony Options:

Hosted Telephony:

Note: Hosted telephony is also known as 'Cloud Telephony', 'Hosted PBX', 'IP Voice Centrex', 'Hosted VOIP' and a number of other derivatives.

A large number of public sector organisations and businesses have already moved to a managed IP Hosted Solution in the last few years. This is the main contributor to the massive decline of ISDN in recent years.
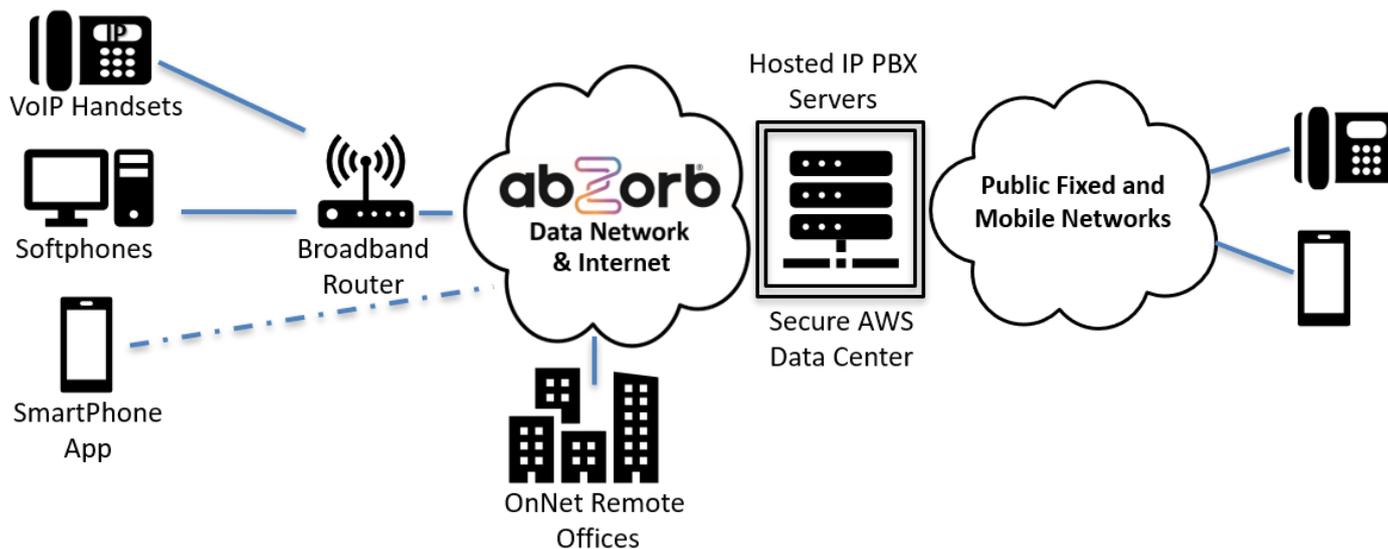
As per the diagram, the main difference between hosted voice and traditional voice solutions is that all your telephones (handsets or softphones) are connected directly to your router via your data local area ethernet network. All the intelligent functionality (call recording, call routing, hunt groups, time of day settings etc.) is done in the secure cloud instead of using onsite expensive telephony hardware.

The main benefits of a hosted IP voice solution are:

- No large capital expenditure in your own onsite voice switch (PBX)
- No need for onsite skilled engineers (or expensive maintenance agreements)
- Significantly increased functionality such as automatic or manual call recording, time of day, follow me and hunt group call routing etc. Options for physical handset, softphone (telephone on your pc) and mobile phone connectivity
- Eliminates all dial-up fixed-line costs incurred with line rental call charges across PSTN and ISDN access lines
- Converges your fixed-lines and data across a single data connection (i.e. Broadband, FTTP or leased line) with the addition of a SIP Trunk service, delivering significant cost savings.

There are some negatives with a hosted solution as:

- You'll need to upgrade to VoIP handsets if your existing solution utilised traditional telephony only
- The system will require a reliable data connection with enough bandwidth to support all your voice and data needs. A connection with a Service Level Agreement (SLA) is recommended
- Annual licenses with some providers incur additional costs for specific functionality.

In many ways, the choice is between a CAPEX investment or a lower but annual OPEX cost. If you have already invested in a hosted telephony solution the likelihood is that you will not have to do anything!
Of course, one of the main benefits of a hosted voice service is that you have no large hardware investments in onsite voice switches (PBXs,) so you are free to change hosted voice providers at anytime when your contract ends.

This is something we would advocate, especially with a competitive market and many new services, packages and functionality over the last few years. Please take a look at the Abzorb Hosted Zone as a great example of this: Hosted Zone webpage.

Upgrading your existing onsite telephony solution:

If you have an existing on-site telephony switch (also frequently called a PBX) the ISDN switch over does not necessarily mean that you have to stop using this capital investment.

The only question you may have to receive advice on is whether the existing PBX is already an IP PBX or can be upgraded to support IP transit.

Often newer switches (if not inherently IP based) can be upgraded with an 'IP card' or possibly with a secondary IP gateway to support IP transport to the external telephony world. At Abzorb we have upgraded a vast number of switches to do this already.

The only real difference to you as a public sector entity or business is that you will utilise a fixed data connection (such as business broadband or a leased line) and an additional SIP trunk service instead of the traditional ISDN2 or ISDN 30 dial up connection that BT Openreach are withdrawing in 2025.

Note: Just like a hosted voice solution you can utilise business broadband or leased line connections for both your IP Voice and your Internet/Cloud data requirements. Even without the ISDN 'switch-off' this can bring significant cost savings, so may will be worth exploring prior to the 2023 and 2025 deadlines.

The main benefits of this approach are:

- You can utilize your existing CAPEX investment
- No need to change or upgrade your existing handsets or retrain users
- Realizing the cost benefits of converging all your voice and data onto a single Wide Area Network connection
- Delaying any new major telephony upgrades until your existing solution needs replacing.

However, there are a few downsides to take into consideration:

- Often reduced functionality compared to a Hosted Voice Solution
- Need to keep paying on-site maintenance and service costs
- Questionably delaying the inevitable
- Need to assure you can obtain a reliable and fast enough data connection for your voice and data needs with relevant SLAs.

The Importance of a Consultative Approach:

The benefit of choosing a service partner who is totally agnostic to technology and has wholesale relationships with all the national infrastructure providers means that you can rest assured that when we offer a free consultation there is no hidden agenda. Our goal is to ensure you have the right solution which gives you the right options when the 2025 ISDN switch off comes into force, or if there are better solutions for your specific needs prior to this date that these are fully explored.

It is important to remember that your fixed voice service needs to be end-to-end, bringing together the right voice technology (on-site or hosted), partnered with the right connectivity for you - whether that is to remain on ISDN for the time being or migrate to a voice and data converged broadband or leased line solution.

Finding a partner who can bring you an end-to-end service will reduce confusion when trying to ascertain any temporary faults, simplifies all support whilst in all likelihood reducing costs. These benefits are amplified further if you converge all your data and mobile needs with your fixed voice requirements in a unified comms solution with the help of an agnostic approved comms provider.

This is exactly what the Crown Commercial Framework 2 recognises, proven communication providers who pass stringent technical, reliability and cost qualification criteria. Through their public sector-wide tendering process, you have the peace of mind of simplifying your buying decision with the right solution providers and the mass buying power of the whole public sector behind you.