



# IP TELEPHONY

A business guide to cloud-based telephony 2023 - 2027

## REAP THE BENEFITS!

Find out how much you can save with VOIP

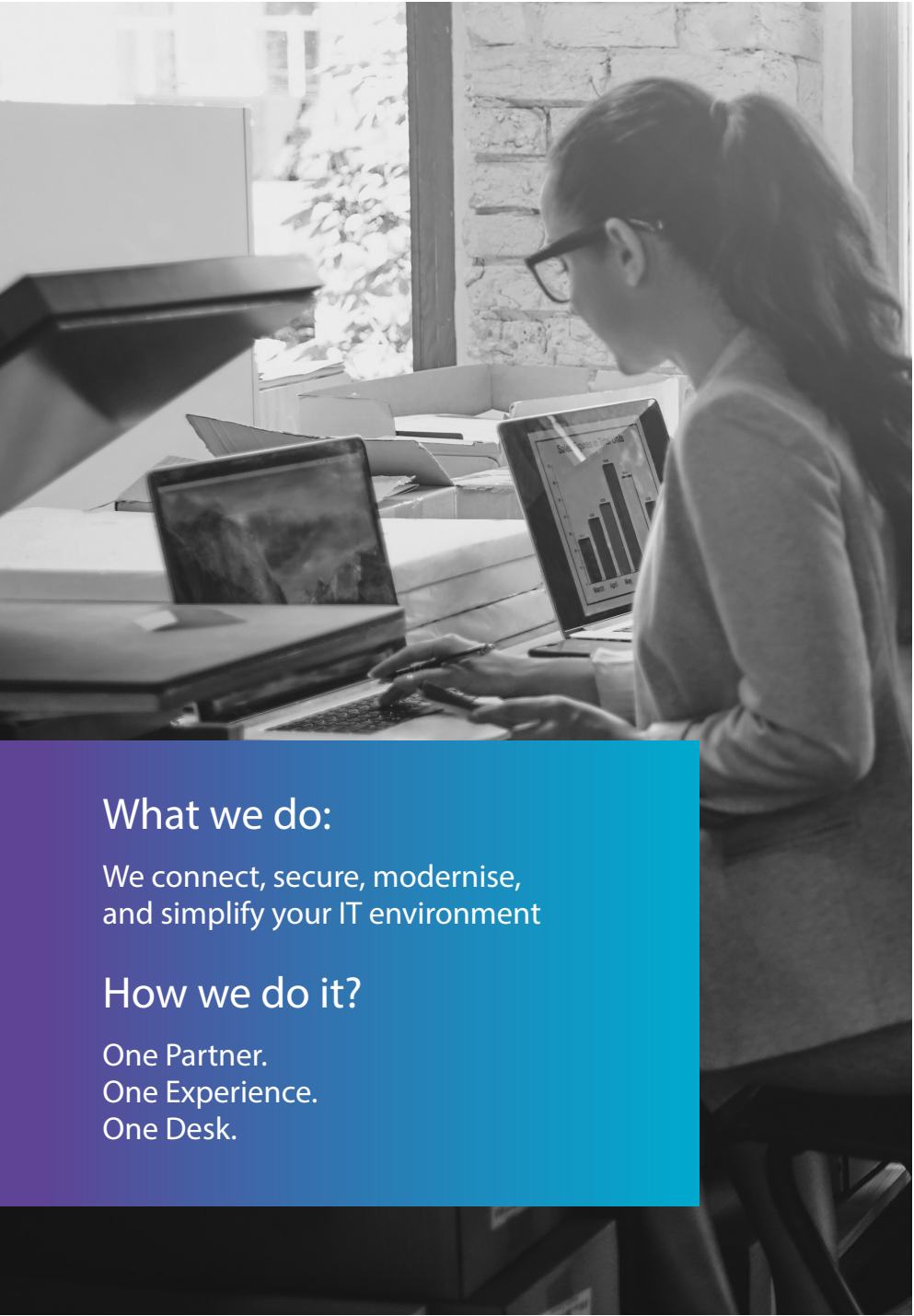
HOW SIP TRUNKS WORK

## Mobile VOIP

An efficient and low-cost way to communicate using mobile devices

Preparing for the 2027 PSTN Switch-off

CLOUD TELEPHONY EXPLAINED



## About VCG

We are a technology and IT transformation partner, helping organisations of all types and sizes to maximise and optimise their potential through the smart use of IT.

We connect, secure, simplify, and modernise IT environments while helping IT decision-makers protect costs and right-size their investments.

We are accredited partners of Cisco, Microsoft, Fortinet, VMware, Meraki, Veeam, and others – with a proven track record of project successes across UK enterprises, high street retailers, SMBs, and public sector organisations - including local authorities, hospitals, and blue light services.

### What we do:

We connect, secure, modernise, and simplify your IT environment

### How we do it?

- One Partner.
- One Experience.
- One Desk.

# Note from our CEO

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All organisations are facing challenging times as economies struggle with rising costs and increased demand for secure digital services.

Here in the UK, we are preparing to switch off the copper network that's been the mainstay of our communications for decades. The Public Switched Telephone Network (PSTN) is being closed by Openreach in 2027, and phone lines need to be upgraded to 'voice over internet protocol' technology (VoIP), that uses the internet and operates over a fibre-based infrastructure.

The move to IP telephony (IPT) will be the most significant change in telecoms for over 30 years, and organisations of

all sizes are preparing for the challenge. This guide will help you plan and prepare for the changes, wherever you are on your journey to IPT and digital transformation.

It's important for businesses to develop plans and find the right technology partner to support them on their journey, and I hope this guide helps you to understand the scale of what's about to happen, and how to prepare for the changes.

If you'd like to know more about the options available, and would like to speak to me or one of our telephony and unified communications experts - please contact us.

Robert Moss  
CEO



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# IP Telephony - Current Position

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Today in the UK – pending the 2027 PSTN withdrawal

With the early inception of solutions like Cisco Call Manager, enterprise IT professionals are all familiar with IPT, and the saving and benefits it delivers through converged networking. Full fibre deployment is moving at pace with countless network operators of various sizes competing against, and partnering with Openreach. And the sunset date of December 2027 for the PSTN switch off is dependent on all existing lines being upgraded to digital IP based telephony solutions.

There are 600 exchanges in the UK, and communication

providers have been given notice to stop selling copper-based products once fibre network coverage is available to 75% of that exchange.

Full fibre is currently available to more than 7 million premises and solution providers are being encouraged to move their customers onto full fibre as the services become available.

Openreach has created a long-term wholesale full fibre pricing offer, known as Equinox, and they are encouraging communication providers to sign up. VCG is one of them, and the agreement covers all new orders



of fibre to the premises (FTTP). The long-term pricing certainty lasts until 30 September 2031, and is available across the entire FTTP footprint. Pricing certainty will help all providers to promote and boost full fibre adoption.

## The Right Infrastructure

Full fibre is core to the adoption of IP telephony, as it enables IPT solutions to run seamlessly. This guide is designed to create awareness of the need to take action now, as customers become increasingly aware of the PSTN sunset date, and the pending withdrawal of the legacy copper-based network, and its associated equipment and services.

At the end of 2022, it was estimated that 8.6 million premises had access to full fibre connectivity, which equated to 27% of all UK premises. Interestingly, Openreach is also adapting its copper network to cope with IP based traffic before the 2027 shut down, to speed up the adoption of IP based voice traffic, before FTTP is fully available to all.

# External Forces

It goes without saying that the PSTN switch off is a major driver for moving to IP telephony, but the continued growth in 'hybrid' working following the pandemic is another factor boosting transformation.

Telecoms and IT service providers are discussing with customers the imminent changes, and how our evolving working practices are impacting costs. Concerns about the costs of moving voice services to IPT are being addressed, and competitive new services are available with the option of keeping existing hardware through the use of gateways.

IPT and the natural integration of fixed and mobile telephony, where calls can be taken on the move and at the desk, provide significant opportunity for cost savings, and enterprise users must guard against too many cost saving initiatives at

the expense of support and security.

Integrated voice services and workplace collaboration solutions that have user support, resilience, and business continuity will ensure that voice is fully protected alongside other corporate systems and data, making it more cost effective than ever before.

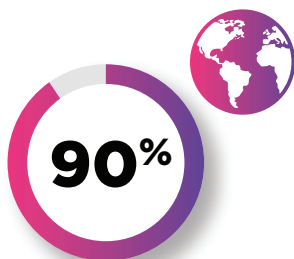
Recent reports show that **over 75% of UK businesses are still reliant, to some extent, on the PSTN for telephony and security services** despite the looming deadlines, seem hard to fathom - and clearly the move to IPT still has a way to go. It's fair to say that many organisations, driven by the benefits of unified communications, collaboration, and cloud-based systems, are well on their way to a fully digital environment, but demand for IP based services will almost certainly increase as the sunset date of December 2027 draws

closer, and the inevitable last-minute rush.

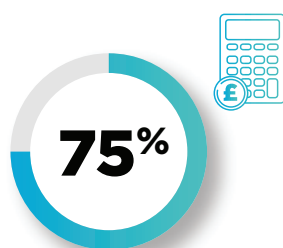
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## HOW MUCH CAN I SAVE WITH VOIP?



Savings on international calls



Savings on operational calls



Saving on phone bills

# ECONOMIC GROWTH IMPERATIVE

The need for faster broadband and advanced digital services are growing as consumer demands for high speed, multi-channel communications drive 'customer experience' led business growth. High speed broadband is essential as employees need to be connected and responsive wherever they are, and on whatever device - through a variety of channels that include email, mobile, video, voice, messaging, web-chat, and social media.

Only **60%** of contact centres currently provide customer webchat.\*

From a customer service perspective, telephone calls are still the preferred way for most customers to contact companies, but omni-channel contactability is growing in popularity as customers left waiting in call queues express their dissatisfaction through reputation damaging posts on social media. Anticipating our ever changing customer habits, and taking steps to improve contactability is a business imperative.

\*Source: UK Contact Centre Forum.

**35%** of organisations don't have the technology to support multi-channel customer contact.\*

There's a growing public realisation that there are smarter ways to contact companies than queueing for hours on the phone, and the shift to multi-channel customer service is critical for organisations wanting to provide an excellent customer experience. Organisations seizing the customer service initiative are out performing their competitors, and growing their businesses ahead of the market.



## Reduced management burden

Moving to IP telephony shifts the burden of management, monitoring, updating, patching, and maintenance away from in-house IT departments and over to the service provider. Optimising licensing costs and bundling voice with other complimentary software-as-a-service (SaaS) options enables rapid scaling to meet demand changes. Speedy provisioning helps companies deal with seasonal spikes in traffic, and faster than expected business growth.

IPT systems easily support the integration of remote and hybrid workers, and enable fully functioning contact centres from a cloud-based platform that's accessible from anywhere.

The maturity of IP telephony coincides perfectly with the withdrawal of the PSTN, and the ever-evolving technology transformations in our domestic and working lives. Voice will always be close to our hearts, but it's now just another application, and no more important than other methods of communication.

# PREPARING FOR CHANGE



DEADLINE!



According to reports, around **2.4million businesses** across the UK still operate on legacy phone lines and ISDN services.

IP telephony is already well established in the UK but in a couple of years it will become the primary telephony option, as the PSTN is retired in December 2027.

As with everything that has an end date, things always 'hot up' as the deadline approaches, and whilst IP gateways will provide some reassurance that legacy hardware can still operate, the time is now to start planning an IPT future, if you haven't

already started!

Research suggests that around **50% of UK businesses** do not currently use a cloud-based solution to integrate their communications, but would consider doing so! Additional insight from Cisco, BT, and others indicates that **under 10% of businesses in the UK** are prepared and ready for the switch off.

## STOP SELL 2023

Businesses that don't adopt IP telephony systems before the PSTN switch off are likely to face more problems than just not being able to make calls.

Many alarm systems are connected to company phone lines, and if these are not upgraded, they will become inoperable.

In advance of the 2027 switch off, once an exchange area is over 75% full fibre-enabled, additional traditional phone services will not be able to be ordered, potentially affecting phone systems for organisations in those locations. All exchanges are expected to reach this point around September 2023.



Most companies are unaware of the imminent 'stop sell' of legacy services, and of the 10% that are aware, most don't know what to do about it.

# TALK TO YOUR PARTNER

IT services partners are ramping up engagement with customers to make them aware of the situation and to encourage them to start planning and preparing for IP telephony and the PSTN shutdown.

At VCG, we are helping customers plan and make the transition as smoothly as possible, through a phased, integrated approach that seeks to streamline investment and optimise performance.

We're handling the migration to IPT and any installation of new hardware and ongoing maintenance to ensure that the transformation is as simple and user friendly as possible. Migrating to IP services needn't be a long or painful process, and you don't have to change your phone numbers and many of your existing settings and messages.

Businesses adopting IP telephony only pay for the services used, and the systems are easy to manage and scale to meet demand. Previously, companies expanding, moving premises, and entering new markets had to invest in additional infrastructure, hardware and support costs. But with IPT, much of this can be done at no added cost, enabling companies to innovatively drive expansion

initiatives without concerns over the capital investment needed to support such growth. The time between now and 31 December 2027 is crucial for companies seeking to gain an advantage from flexibility, and improved operational performance.

Planning a move to IP telephony in good time will also enable employees to become more

familiar with the new systems in advance of any imposed change deadlines, and we highly recommend early engagement with us to plan your IP telephony future.





# SIP TRUNKING: THE BASICS

**W**e are all aware that PSTN and ISDN services cease functionality from 31 December 2027, so how will telephony services be connected after that? The answer is by SIP Trunking or SIP - which stands for Session Initiation Protocol. It's an application layer protocol that enables phone systems to run over an internet connection instead of traditional phone lines.

IP telephony or voice over IP (VoIP) services will replace the PSTN and phone connections will be provided by SIP trunks. In general, SIP trunks perform the same function as current PSTN lines, but unlike them, they are virtual, with no hard wires.

SIP trunking is the established standard for initiating multimedia and voice sessions using IP, and calls placed over the network follow the SIP protocol, which enables communication over an Internet connection.

SIP trunking consists of virtual lines that carry multiple signals simultaneously over the Internet. A phone number is linked to a SIP trunk, and in the same way that ISDN works now, a SIP trunk can support a number of users.

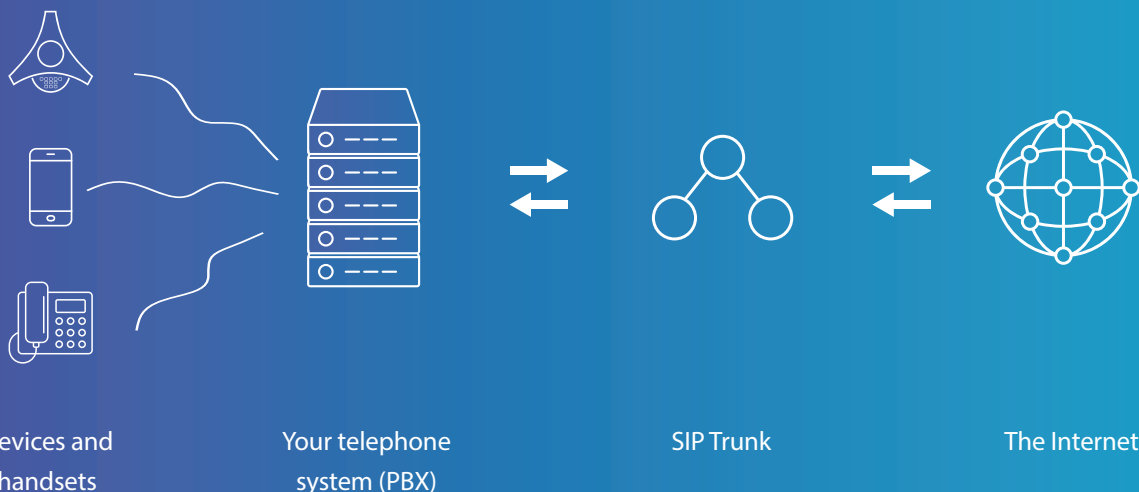
SIP trunks are virtual phone lines, so there are no wires and many businesses have already



integrated SIP trunking into their phone systems to take advantage of the flexibility and other advantages including reduced costs.

SIP trunks can connect an organisation internally, as well as externally, as these connections are made over the internet and other data networks. SIP trunking will be provided by your IT services partner or internet service provider (ISP), as it's a virtual service linked to your internet connections.

## HOW SIP TRUNKS WORK



A hand holding a pen over a cityscape with a grid overlay.

# Unified Communications & Cloud Voice

## What is Unified Communication?

Unified communications (UC) bring together enterprise communication tools such as voice calling, video conferencing, instant messaging (IM), presence, content sharing, and more into a single, streamlined interface that improves employee productivity and morale.

In relation to the PSTN switch off it's highly significant because the use of unified communications and collaboration is IP based and brings together voice and data services. For many organisations, adding voice to their suite of collaboration and networking services, from Cisco and Microsoft, will be all that's required to move from legacy

voice services to the new world of integrated IP telephony. Cloud voice services may be positioned as separate stand-alone services, but in the main they will be part of a core UC suite of offerings that all work together.

Embracing full unified communications technology enables your workforce to switch seamlessly from one mode of communication to another within a single session, whether on a desktop computer, laptop, tablet or smartphone. Initial contacts through a quick chat can very easily be turned into a face-to-face video call with a single click, without having to open a separate video application. UC can also integrate with business

applications, such as project management software, and document history and storage, to enable the easy accessing of information and resources, during collaborative sessions.

As the sunset date of the PSTN in the UK draws ever nearer, the increasing popularity of unified communications is part of the ensuing digital transformation and cloud migration under way across business. The benefits of remote and hybrid working that were accelerated during and following the pandemic greatly accelerated this shift, and the move to IP services will help organisations plan for and face the PSTN switch off with renewed optimism.

# OPERATIONS & BENEFITS?



Unified communications are generally cloud-based systems, sometimes referred to as UC platforms, that integrate services and bring everything together - they can be deployed on premises, but increasingly customers are opting for cloud based hosted solutions and managed services options.

In the main, UC will increase workforce productivity by supporting more communication and collaboration than the legacy phone system, and saving employee time in navigating from one application to

another. Additionally, specific UC elements, such as video conferencing, are linked to reduced travel costs, greater efficiency, more flexibility and better engagement. All of which improve the bottom line for companies. Employees need no longer waste time traveling to and from a customer or workplace premises for non-essential meetings and conferences. With UC - employees can work from the office, their homes or on the move whilst travelling, using a variety of devices, from desktops, laptop, tablets, and mobiles.

Originally UC systems were restricted and available only in-house, but nowadays they are far more open, and calls with customers who may use differing platforms are no problem. UC solutions also integrate with social media, customer-facing apps, and call centre platforms that boost customer satisfaction and provide real-time feedback.

## Components of Unified Communications

Typically, the applications and tools in a UC solution include:

- IP telephony with fixed & mobile integration
- Instant messaging & chat
- Email
- Calendar, scheduling & PA services
- Availability of all applications on mobile
- Presence
- Voicemail
- Screensharing
- Video & audio conferencing
- Web conferencing, virtual meeting spaces, & interactive whiteboards
- Enterprise social networking & collaboration platforms

At the back end, systems may include the following:

- Single or multivendor platform
- Cloud IP based PBX
- Handset, headsets, cameras, & mics
- Business communication gateways

# Mobile VoIP

Mobile VoIP (also known as mVoIP) uses a mobile device to make VoIP phone calls, in the same way that fixed IP calls are made, either from IPT handsets or laptops / headsets. It can be an efficient and low-cost way for businesses to communicate using their mobile devices and VoIP services by enabling the connection of mobiles to local area networks (LAN) and Wi-Fi to keep calls on-net and route calls directly over the internet, and not over the cellular networks. Calls from mobiles are generally bundled into monthly subscriptions, but the benefit here is for users to have a business number that routes calls to their mobile and their fixed device (if they have one) simultaneously – enabling the separation of personal and business calls.

Mobile technology has been a culture shift enabler to give people the ability to work anywhere. Having the same

interface, same features and same number, whether in the office, at home or on the move is very empowering to flexible workforces. All business applications (including voice) are fully unified solutions that can message, call, and video from a single application.

Employees can start a meeting on their laptop and switch the session seamlessly to their mobile if they need to, without disconnecting or leaving the call. Similarly, you can transition a mobile session to a fixed device if you reach your desk during the meeting, meaning employees are never late for calls due to travel delays, or if they need to leave their desks in the middle of a call.

Mobile VoIP provides the same flexibility, scalability, and visibility wherever you go and employees living in areas where mobile coverage is weak can use Wi-Fi to ensure connectivity.

MOBILE VOIP REQUIRES SEVERAL TECHNOLOGIES TO COME TOGETHER EACH TIME A SESSION STARTS:



#### IT SERVICE PROVIDER

A partner with the voice and networking capability to manage and route calls using fixed and mobile integration.



#### RECENT SMARTPHONES

Mobiles need to be compatible for mobile VoIP services - fairly recent smartphones running Android or Apple iOS should be compatible with mobile VoIP.



#### HIGH-SPEED INTERNET

To ensure a high-quality VoIP call, a fast connection is needed - speeds above 3 to 5 Mbps should be fine.

# IP Telephony - The Future

In the business world, IP telephony has been firmly established for many years as networking developments enabled the convergence of voice and data traffic onto unified platforms.

The growth in flexible and hybrid working continues at pace as productivity of remote workers has been proven to be just as high (if not higher) than staff based permanently in the office. IP telephony was the base

technology on which unified communications were developed, and video applications that we take for granted today, like WebEx, Zoom, and Teams – were all made possible by early IPT technology.

## FOCUS AREAS

As most IPT solutions require only an internet connection, the opportunity to streamline operating costs will be attractive to many companies, but as with everything, decision makers will need to ensure call traffic is prioritised and audio quality is strong to minimise frustrations and mis-communication. Call quality is improved by faster internet speeds, noise cancelling features, audio processing technology, and speech science.

Organisations with international calling requirements will benefit from cost savings, and mobile phone integration will keep traffic on-net wherever possible whilst ensuring mobile workers remain connected and productive at all times.

The collaborative working benefits of IPT and UC will remain at the forefront of developments, with seamless communications enabling the workforce to discuss, share their screens, exchange documents, and work as if they are in the same room as their colleagues, when in fact they are miles apart.

On-boarding new employees will be much easier, and the rapid scaling of UC solutions will be possible to cater for

business growth, and as more organisations adopt hybrid working practices, calling capabilities and contact centre solutions will remain consistent whether in the office, at home, or at another remote location as employees enable their business number to ring all of their devices, maximising the chances of contactability.

IP telephony and UC solutions already have built-in security and protection, and this will continue to evolve to keep pace with the ever-present threats from cyberspace. Securing increasingly borderless networks, and protecting sensitive information and data will remain on the boardroom agenda as the global digital economy continues to evolve.





# CARPE DIEM – THERE'S NO BETTER TIME TO DO IT!

Companies were forced to introduce flexible new ways of working as they scrambled to remain operational when the pandemic hit, and whilst those adopted workstyles and disparate applications remain the same for many, the opportunity to assess what's available, both now and in the near future, will enable organisations to build a technology workstack to directly meet their needs. Platforms that integrate IPT, multi-channel contact centres,

video, presence, chat, email, and more into a single unified solution will be needed more than ever to be competitive, productive, responsive, and customer focused.

Working with a technology partner who understands your business needs and objectives will play a key part in seizing the initiative at a time of perceived disruption. Optimising technology platforms whilst controlling and reducing operating costs are within the grasp of every organisation!



# Preparing for the 2027 PSTN Switch-off

The phrase 'failing to plan is planning to fail' has never been truer, and businesses that don't prepare could face a number of additional problems above and beyond telephony. Security, elevator alarms, and other points of emergency contact that are still operating on legacy phone lines and hardware at the time of the switch off will become inoperable.

IT departments, communications, and IT services partners will be aware of an organisations PSTN lines, but the equipment needing to be swapped out or updated before the sunset date is the responsibility of the customer. So, the more preparation a company makes in advance - the easier the transformation to IPT will be.

This may just be a case of buying replacement handsets and becoming familiar with the new telephony services dashboard, but other organisations may need to replace outdated equipment and embrace new services offered by IPT, including call analytics and phone hold messages.

Regardless of the size of the organisation, now's the time to speak to your communications provider and make plans, as leaving it too late risks facing a stressful and costly project closer to the deadline date. Working with VCG and our dedicated communication experts, we'll help you plan, scale, and implement a full migration plan - from the initial discovery phase right through the project stages to full on-site testing in advance of the switch off.

## A painless process

We'll make the transition as smooth as possible - from upgrading handsets to replacing legacy systems with appropriately scoped and scaled IPT services. From the nuts and bolts of managing the project, through to ongoing maintenance and management, we'll provide you with as much help and support as you need. This needn't be a complicated or painful process, and we'll be with you all the way.

Adopting IP telephony has numerous benefits, and organisations only pay for what is needed, and the flexibility of the services will easily scale up or down as required. Business expansion, location changes, and new opportunities are easy to cater for with IPT, in contrast to legacy telephony systems, where additional lines, hardware, and maintenance are needed. Cloud telephony services handle such changes with minimal or zero additional cost, enabling companies to optimise communications and maximise new business opportunities.

The time to act is NOW.



Get in touch for a technology  
cost assessment  
with our specialist teams.  
Whether that means  
security, licensing or legacy  
infrastructure.

Call 0161 406 1820 Email [sales@vcg.group](mailto:sales@vcg.group) Visit [vcg.group](http://vcg.group)