

Convergence: The future of communications

*A briefing paper on IP telephony: the technology,
the benefits and the providers*

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Defusing the IP telephony timebomb – why you should act now

If your business hasn't yet taken the plunge to IP telephony, then time is running out. Manufacturers are rapidly replacing their phone systems with IP-based ones, which means that spares for older systems will become harder to get and upgrades and patches will eventually stop. The momentum is unstoppable and inevitable. Even BT are ripping out their UK digital phone network and replacing it with an IP voice infrastructure as part of their '21CN' project.

So what's the problem? Surely it's just a new phone system?

Well, no. IP phones do look like a normal office phone but that is where the similarity stops. IP phones are, in fact, small computers that connect to your PC network, but just happen to look like phones. Pretty much everything about IP telephony is different and you need to be prepared for the change over.

So where are the risks?

Your PC network: Phone systems usually have had their own voice network to guarantee call quality. IP telephony instead runs over the PC network so your phone calls are now fighting for space against e-mail, web browsing, basically everything that your staff use their computers for. When the network gets busy, IP telephony systems can fail.

Your phone numbers: You will want to keep your existing phone numbers, but these will be with a traditional phone supplier like BT. To move these numbers over to a IP telephony provider is possible but is fraught with logistical and regulatory problems. And if it goes wrong, you can end up with disconnected numbers that don't go anywhere.

Hidden costs: The majority of costs associated with IP telephony are with maintenance and software upgrades. All of the major IP telephony vendor make significant profit from ongoing upgrades to the core system. To maximise this they frequently release new versions of software that you must eventually upgrade to otherwise they will not support you. These upgrade costs are not trivial and can be £100,000+ for a large phone system.

The transition process to IP: Your phone system is the communication lifeblood of your organisation, and moving 100s or even 1000s of users to a brand new phone system without dropping a call is major logistical challenge.

Not only are the technical issues of installing a new IT system significant, but how calls flow around your organisation – hunt groups, help desks, switchboard, etc – needs to be replicated exactly between the old system and the new.

Technical support: Once this new phone system is in place, who will look after it? Your current phone system could well be looked after by the facilities team, whereas your computer network and systems are looked after by IT, which is the natural place for IP telephony. But does your IT department understand phone systems? Who is going to help them get up to speed?

However there are a number of providers that are offering a complete a shrink-wrapped, managed IP telephony service to address these issues, and this model is rapidly growing in popularity.

Instead of buying a PBX with all the associated costs and risks, you agree a fixed monthly charge per employee. Like all managed services, it is supported by a 24x7 technical team and the monthly charge is guaranteed not to increase over the duration of the contract – there are no nasty surprises or bills for upgrades.

The migration from your existing system to IP will be professionally project managed by the supplier and you can usually phase it over months to reduce the impact. A major advantage of a managed service over a PBX is that it can be introduced one phone at a time, which minimises the risk associated with traditional 'rip and replace' scenarios.

Unlike your in-house IT team, your managed service provider will have done this migration many times before with other customers and know how to avoid the pitfalls. And because the provider is responsible for looking after the system both at installation and during the contract, they have the job of paying for all the expensive IT people to maintain it, not you.

The managed service model is not for everyone but it is a serious alternative to the IP PBX and much less expensive than you may think. And with the clock ticking on your old phone system, it could be one way of diffusing the IP telephony timebomb.

Converged IP communications – An overview

Telephone systems and their networks have become increasingly complicated as they have evolved to meet ever more demanding business needs. Unfortunately whilst data networks have also evolved, the two technologies have done so in parallel rather than in unison making them almost completely disparate.

This has effectively made telephony a self-contained service, requiring proprietary hardware and software, separate dedicated networks and specialist telephony-only skills for management and maintenance. This adds significant business inefficiencies in terms of infrastructure, resource management, supplier relationships and ultimately cost.

Converged communications removes these inefficiencies by delivering multiple services across a single IP network offering not just technology advantages, but real business benefits.

Increased flexibility

Traditional telephony solutions with proprietary hardware and dedicated networks do not lend themselves to flexibility. Upgrading by just a few users can be a complicated and costly affair. Whilst it may appear that just a few handsets are needed, that upgrade may require additional line cards and trunk cards for the PBX, as well as additional phone lines from the network provider.

In an IP environment additional 'phone lines' become channels across the network and can be easily enabled across the existing network connection, negating the cost and wait of a line upgrade. Offering even more flexibility, a hosted solution has no 'hidden costs' for upgrades such expansion cards, and simply requires a new handset and user account.

IP networks are not restricted to providing connectivity for hosted solutions however. By using services such as InTechnology's PBX Connect, organisations with legacy PBX systems can connect via a converged IP network, integrating them into an IP telephony solution.

As IP networks are very scalable, telephony services delivered across them become scalable too. Thanks to this, feature rich telephony services can now be delivered to businesses of all sizes, from small offices using low cost ADSL circuits, through to large headquarters over 1Gbps fibre links.

- ✓ New 'lines' easily provisioned across IP network - reduced wait and cost
- ✓ Scalability of hosted telephony - add users easily as and when the business needs
- ✓ Legacy compatibility - integrate PBX systems into an IP telephony solution
- ✓ Scalability - range of connectivity types for businesses of all sizes

More efficient use of staff

A converged IP network brings with it a new concept in how calls can be handled within an organisation. With a hosted telephony service, no longer are staff 'tied' to a particular site. This fluid approach means calls can be directed across your organisation instantly and regardless of staff's geographic location. For instance, during busy periods, staff across multiple offices can be 'brought on-line' to receive the higher influx of calls. This kind of flexibility facilitates superior customer service, reduces staff costs and provides an advantage over less forward thinking competitors.

In addition, cost-effective home-working becomes a reality with hosted IP telephony enabling organisations to capitalise on geographically dispersed staff as well as those who require flexible working arrangements. This provides an organisation with access to staff outside of commutable distance from the office, as well as the ability to expand without having to move premises.

- ✓ Complete fluidity of call management across the entire organisation
- ✓ Use staff across all sites more effectively
- ✓ Employ home-based staff - expand the business without expanding the premises
- ✓ Improve customer service and gain competitive advantages

Enhanced business continuity

A hosted IP telephony solution moves the call functionality out of the site and into the network. This provides continued service to inbound callers in the event that a site becomes unavailable. Whether connectivity to the site is severed, or the site itself is inaccessible through flood or fire, calls can still be received, processed and

directed. Calls can be directed automatically to an alternate site, to home-workers or even mobile phones ensuring that revenue doesn't suffer as a result of the outage.

- ✓ Functionality in the network, not on the site
- ✓ Removes the single point of failure
- ✓ Enables a business to maintain operations, even with a site out of action
- ✓ How long could your business last without communications?

Reduced costs

Substantial savings can be realised by running a single converged network. As well as reduced network rental charges, the simplification of infrastructures can offer further cost reductions. Whether held in-house or provided by a 3rd party, no longer is it necessary for an organisation to need specialist telephony skills in addition to data network skills. Multi-site organisations can also benefit from inter-site 'on-net' calls being free, as well as reduced rates for 'off-net' calls.

Further savings can be made by employing a hosted telephony solution. The use of an IP network for voice enables the functionality normally provided by expensive on-site hardware to be hosted in the supplier network and simply delivered as an application. The fact that PBX hardware is no longer required at each site can offer significant savings.

With a hosted solution, additional cost efficiencies can also be taken advantage of. Rather than investing in site-based hardware with spare capacity for the future, a hosted solution enables a 'pay as you grow' approach to scaling up the number of users. This way a business can pay for what they need, when they need it and not upfront.

- ✓ Reduced network costs
- ✓ Reduced call costs
- ✓ Free calls between sites
- ✓ No longer require specialist PBX and voice network resources
- ✓ Savings on hardware costs, and the cost efficiencies of a hosted solution

Hosted vs onsite telephony solutions

What is traditional telephony?

Businesses requiring a telephone system have traditionally had to have a physical device installed into their premises. This system, or PBX (Private Branch Exchange), connects to all the phones within that site on one side, and connects to the PSTN (Public Switched Telephone Network) on the other - enabling calls to and from that site to be made. The PBX sat in the middle then provides all of the functionality required by the business, such as the ability to transfer and forward calls, voicemail services and more advanced features such as call queues or auto-attendants.

Traditional telephony for multi-sited businesses

With traditional site-based telephony, a PBX is required at each and every site from the headquarters to the smallest satellite office. This will be of significant cost to the organisation in terms of the hardware purchase, the installation and ongoing maintenance. This estate of PBXs across the country will then need to be managed and administered (for example carrying out moves/adds/changes) requiring either a 3rd party resource or an in-house specialist, again at a cost to the business.

Traditional connectivity

Each PBX requires a connection to 'the outside world' so it can make and receive calls outside of the office. Typically a PBX will be connected by analogue or ISDN lines which attract a monthly rental and call charges from the service provider.

What is hosted IP telephony

Hosted IP telephony (more commonly known as VoIP) provides the 'telephone system' functionality required by the business without having to have a PBX on-site. The intelligence is hosted within our network on carrier grade IP voice platforms and is delivered to the organisation's various sites across our IP network.

Hosted IP telephony solutions use IP (Internet Protocol) rather than analogue or ISDN lines. This means that a single IP network can now be used for both your telephony requirements and your data/Internet requirements as part of a converged network.

Consequently it is no longer necessary to have one network for data and another network for voice offering tangible savings from line rental reductions and improved operational efficiencies.

Why hosted telephony rather than site-based?

Opting for a hosted IP telephony service rather than a PBX at each site will offer significant reductions in capital expenditure as quite simply, it's no longer necessary to buy those PBXs. The solution will also benefit from being run over a single, converged IP network. A hosted solution also offers substantial benefits in terms of ensuring business continuity. In the event of connectivity to an office being lost, or an office becoming unavailable (perhaps through fire or flood), calls can now be managed from within the managed network and diverted to an alternate office, a number of home-workers or even mobile phones. No longer is the continuation of your business dependent on a single site.

Cost benefits

As well as savings made on hardware, separate networks, maintenance and specialist resources, a hosted solution offers more. With a traditional PBX, the capacity for that system needs to be scoped in advance, ensuring it will meet the needs of that business in years to come. This is inefficient and forces the business into paying for capacity they will not use for potentially years. PBX systems also often have hidden costs when it does come time to upgrade. Hosted IP telephony offers a clear upgrade path with fixed, 'pay as you grow' cost increases enabling the solution to scale with the business meaning you only pay for what you need, when you need it. In addition, as all sites are linked over a single IP network, there are no charges for calls made between sites.

Operational benefits

With a hosted IP telephony solution, it is no longer necessary to have specialist resources brought in to make changes to the telephone system. Moves/adds/changes can now be carried out with ease via an intuitive web portal, from any PC connected to the Internet. No longer is obsolescence a concern; the worry of having expensive hardware becoming unsupported is a thing of the past with a hosted solution – the provider continually upgrades and maintains its voice platform and continues to manage and support its range of voice services.

Top 10 tips on selecting a hosted telephony provider

Voice services are perhaps the most important service to any business. This makes selecting a reliable service provider one of the most important IT decisions. As with any IT purchase, it is important to wade through the marketing information and dig down to get the answer to questions that matter. These are an example of some of the things that you should consider.

Evaluate service provider and system integrator capabilities in terms of breadth of services and flexibility of offerings

There is real value to a business when it selects a range of services from one provider. The voice services will require an IP connection. It is also sensible to use the same circuits to provide other services. The cost of managing separate suppliers is much higher than dealing with one.

Ensure that the vendor is financially stable and committed to the business over the long haul

There are a large number of providers in this market. Some have significant venture capital funding that has to be repaid, often by selling the business on. A large proportion of the rest are operating on a shoe string and some fail every year. Both of these situations leave you exposed to the risk of no telephony services or one that is altered and not fit for purpose.

Determine what infrastructure needs to be replaced and when

It is not always necessary to replace existing infrastructure; for example, it may be possible to connect the PBX to the service provider using a gateway. This will ensure that the PBX is not replaced before it is end of life but it also allows new users to be added to the hosted voice service. Some providers will make this transition simple.

Look for a service provider that has a clear roadmap

This shows a clear commitment to continue to improve the services and add new features. Technology doesn't stand still and your provider must be moving with the market. Unlike a legacy PBX, selecting a hosted telephony solution protects you from the need to buy expensive hardware upgrades to add new product and or features.

Identify the scope and scale of service provider responsibility

One of the great advantages of selecting a hosted IP service is that it can be a totally managed service. This reduces your IT resources needed to deliver the solution to the end users. Other service providers will simply ensure that the voice network is available and the customer will do all the administration. Select the option that best suits you now and in the future.

Tour the company's network management facility and meet the people who will monitor the network

When you buy a hosted voice service, typically the only thing on site are the phones. Take advantage of any offers to visit the service provider's data centre and/or network management centre. Some companies will be proud of their facilities because they know that the investments they have made are about servicing the customer.

Understand the cost models and total cost of ownership

Total cost of ownership can be confusing. Everyone has a way to show that they offer a reduced TCO. However, take an objective view of this and challenge the service provider. Always make sure that you have added your personnel resource costs and necessary training, both end user and administrator. Remember to include the expected costs of upgrades and adding new services in 2-3 years time.

Select a service provider that has business continuity and disaster recover capabilities

Some providers cut corners, especially when they are in a setup or rapid growth phase. They don't have the resources to deploy services at two or more data centres. They have single points of failure in their hardware, software or network. Building resilience into the platform adds cost initially but it is vital to ensure that the service is always available. If an entire data centre is lost, what happens to the customer data, call recordings, voicemails? If these are important to you, they should be important to the service provider.

Obtain fully documented service resolution procedures

Perhaps the heart of a hosted voice service is the Service Level Agreement. Make sure you read this before you sign. Understand what will happen if things go wrong. You need to be happy with the timescales it could take to get things running again in the event of a problem. Read the small print, it is there for a reason.

Go for a provider that has made considerable investments in the technology and support services

Ask the provider how much has been invested in the voice infrastructure. Some will have invested very little and some may have invested vast sums. If it is too little the service is likely to be poor. If it is very high the price is likely to be high, or they need to add huge numbers quickly which will probably mean a poor service as well.

Managed IP telephony with InTechnology – Your questions answered

What differentiates you from other hosted IP telephony providers?

InTechnology are UK pioneers in managed IP Telephony (VoIP) services for businesses. Unlike most VoIP providers that rely heavily on 3rd party providers, we manage our own UK end-to-end IP telecommunications network. We also offer a seamless switch over from traditional telecommunications services to a wide range of secure, integrated and cost effective IP based solutions.

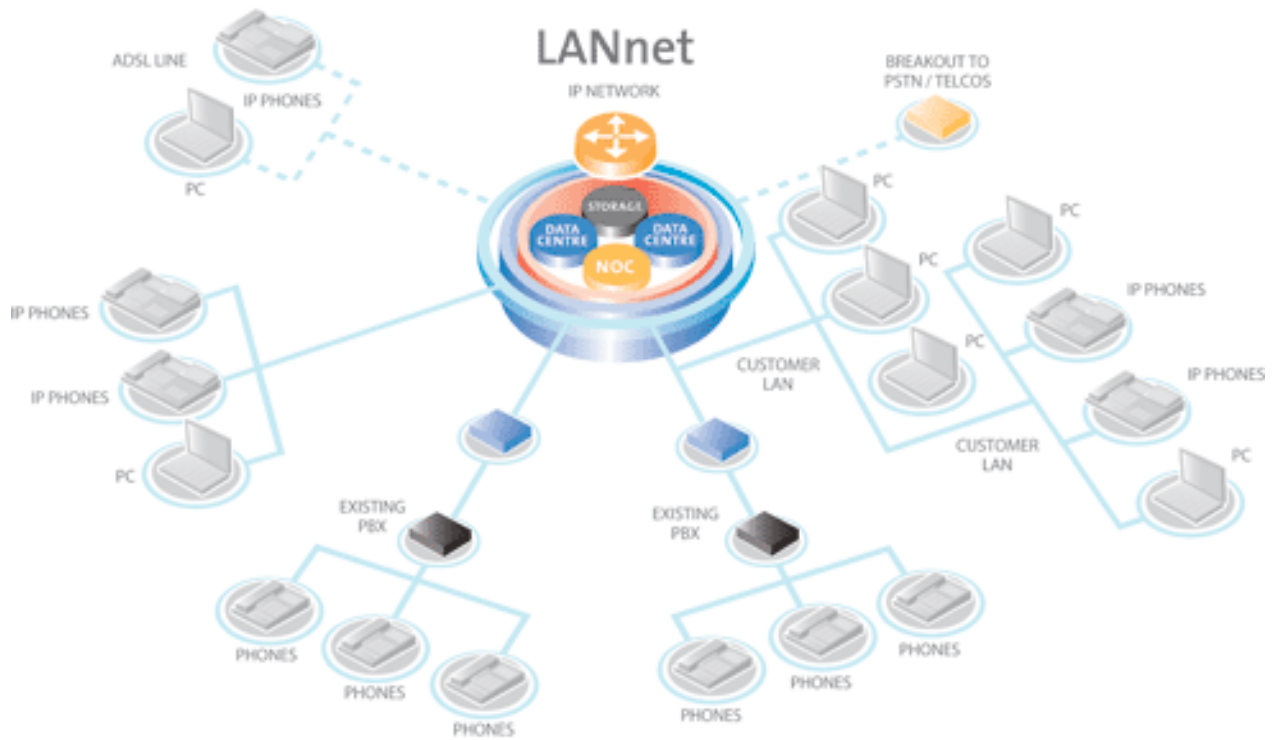
What advantages do you have over traditional telephony suppliers?

Unlike traditional telephony suppliers, InTechnology's heritage in data management and expertise in networking and voice services means we are able to offer clients an end-to-end solution to maximise the benefits of converged data and voice. All our IP data and voice services are provided to your office over a single IP connection - it's easy to connect your world to our world.

Can you summarise your IP telephony offering?

Our managed telephony service, Unity IP Voice, is a hosted voice service designed specifically for businesses. Unlike the customary approach of installing a physical PBX system at each office, all telephony switching equipment is hosted at our secure, highly available data centre facilities. The voice service is then delivered over our LANnet IP network direct to your offices, with IP phones connected to your office LAN. This network-based design is particularly suited for dynamic and growing organisations as it can be quickly changed to fit your requirements, and staff at home or remote offices get exactly the same functionality as their head office colleagues.

For companies looking to move to IP telephony, particularly multi-site organisations, a hosted solution can offer significant cost-savings, as well as increased operational efficiency, resilience and business continuity.



Do you use open technology standards?

SIP (Session Initiation Protocol) is the international standard for IP telephony systems. Unlike some telephone systems that use proprietary technology, Unity IP Voice is SIP-based so is designed to be open and interoperable within a multi-vendor environment. This allows a future-proof managed, scalable telephony service, easily tailored to changing operational needs and one that avoids tying businesses into any one supplier.

In a nutshell - the benefits of a fully managed IP telephony service

Built-in flexibility, scalability and security

- ✓ Fast and simple moves, adds, and changes
- ✓ Quickly scale up or down to match business needs
- ✓ Full design and implementation service

Reduced costs and internal resource requirements

- ✓ Pay-as-you-go charging model with low upfront costs
- ✓ Internal and site-to-site calls are included
- ✓ No need for ISDN lines or PBXs

Simple to administer

- ✓ Users can easily manage their own calls from Outlook or Internet Explorer
- ✓ Unified messaging, mobile and remote working features
- ✓ Consistent functionality for all staff regardless of whether office, mobile or home based

Peace of mind

- ✓ With no PBX on-site, calls can be easily re-routed if your office is out-of-action, thereby securing seamless business continuity
- ✓ Assurance of the world's leading IP telephony system for carriers, BroadWorks
- ✓ 24x7 support from a skilled and experienced support team

For more information on any aspect of IP telephony, please contact InTechnology on 0800 983 2522 or email: sales@intechology.com | www.intechology.com