

Take action on SIP

what you need to know before adopting SIP
and unified communications solutions

An eircom Business Solutions white paper

Introduction

Businesses and IT managers have always closely examined technologies with potential for efficiency or strategic benefit, and SIP trunking and unified communications are no exception. eircom Business Solutions has authored this white paper to help businesses who know they need to take action on SIP to do so in an informed way.

This paper aims to help readers understand what SIP is, what should be considered in order to move towards SIP, and what benefits SIP can offer to their organisations. Insights are drawn from eircom's own research and our field deployments of voice over IP solutions for almost a decade, including both early-generation VoIP and carrier-grade SIP trunking solutions which offer a genuine alternative to ISDN.

Note: The term “carrier-grade” is used in this document to mean a network or service that is extremely reliable, comprehensively tested and engineered without single points of failure, to meet or exceed “five nines” high availability standards and to provide very fast fault recovery through redundancy. Carrier-grade systems are engineered with full geographical redundancy, so that the service can survive a major impairment to an entire location.

1. What is SIP? How does it relate to VoIP? What is SIP trunking? How mature is it?

SIP (session initiation protocol) is a signalling protocol used for controlling multimedia communication sessions, including voice, video, conferencing and messaging. VoIP is a generic name for the delivery of voice traffic over IP networks. In essence, SIP is one implementation choice for VoIP. Note that other standards for VoIP trunking exist, one other prominent one being H.323 which has been robustly serving organisations for years. However it is now acknowledged within the communications industry that SIP trunking has won the “standards war” and has become the de-facto standard across major carriers and PBX vendors.

SIP isn't a variant of IP, the Internet Protocol, but it does run over IP, and that makes it a departure from the traditional voice world, where the core protocol has been TDM for more than three decades. In the TDM world, voice channels are “nailed” to the network - an architecture which offers reliability but has limitations in terms of flexibility. In the VoIP world, by contrast, voice becomes just another application on the network, and voice and data share the same core infrastructure. This eliminates the need for separate voice and data networks, and brings many organisations towards true convergence for the first time.

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SIP has significantly matured as a technology as the adoption of VoIP has accelerated globally. Last year alone SIP trunking service revenues grew by 50% globally, according to the Infonetics VoIP and UC Services and Subscribers report, April 2104. They predict EMEA will be a strong area of growth for SIP trunking in the year ahead. While VoIP still may be in its infancy for overall global voice traffic, an irreversible migration has begun from legacy voice services to voice over IP, and most carriers have adopted a roadmap which includes switching off TDM voice services within the next 10-20 years.

SIP trunking is a particular use of SIP. It is direct IP peering between a VoIP service provider (such as eircom) and the enterprise; specifically, the SIP-enabled IP PBX which provides the telephony infrastructure inside the enterprise.

One important development in SIP trunking in the past two years is the emergence of the SIP Connect standard, and major UC/PBX infrastructure players (including Avaya, Cisco, and Siemens) have begun to build standards-based, native SIP capability into their PBX equipment.

While the SIP standards have not yet reached the universality of ISDN – one cannot be confident that any IP PBX will simply “plug-and-play” with any service provider's SIP trunk – this maturity is coming. The SIP Connect standard is now accepted industry-wide.

2. The customer problems and needs driving the uptake of SIP

In order of commonality, these are the catalysts we encounter most often for customers who are seriously considering adoption of SIP voice services:

a]. Legacy PBX infrastructure end of life and end of support

The seven-year expected lifespan for most PBXs has been pushed as organisations seek to sweat their assets in times of belt-tightening. However the inevitable end-of-life and end-of-support status for legacy PBX infrastructure can leave an organisation exposed to unacceptable risk. Businesses considering PBX upgrade are aware of the SIP voice opportunity and use this catalyst as an opportunity also to examine the wider organisational benefits of SIP trunking, including unified communications and voice and data access network consolidation. Some organisations are also considering Microsoft Lync, to be renamed Skype for Business, as a PBX alternative. Lync has traditionally been seen primarily as a unified communications client, however Microsoft has added enterprise voice to its capability in recent years and it also supports SIP trunking for breakout to the PSTN.

b]. Cost reduction

There is an inescapable downward pressure on carriers' pricing and negotiations can be fierce during times of contract renewal. Evolving to VoIP allows businesses opportunities for cost reduction by consolidating access lines and reducing interoffice call charges.

c]. Need to simplify

In particular for businesses with dispersed IT estates or who have grown by acquisition, complexity of infrastructure becomes difficult and expensive. Most commonly seen is the multi-site environment with hybrid, multiple vendor PBXs serving different sites, each at different stages of maturity support levels. SIP voice offers an opportunity to centralise infrastructure and simplify IT management, with one numbering plan, centralised administration and one (or at most two) SIP trunks serving even the most dispersed organisations.

d]. Scalability and flexibility

ISDN voice services, while solidly reliable, are typically upgradable only in blocks of up to 30 channels. SIP voice services -- assuming the necessary bandwidth is available -- are rapidly scalable to cope with temporary or seasonal demands.

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e]. Adding resilience

Voice resilience has been the elephant in the room for many organisations, which typically rely on a single voice service and hope for uninterrupted business continuity. SIP voice offers a valuable opportunity for affordable voice resilience. Organisations often choose to leave some ISDN in place or provide a second SIP trunk using a diverse access path. Businesses moving to SIP voice often ultimately pay less for their enterprise voice service and secure the added benefit of resilience.

f]. Productivity & collaboration

Companies are increasingly looking to better support mobile and home-based staff by adopting collaboration tools and unified communication capabilities. These include desktop videoconferencing, screen sharing, instant messaging, presence and shared document stores. SIP trunking is a prerequisite for unified communications and collaboration services, allowing voice and video to traverse IP networks, although bandwidth and quality of service must be carefully managed to protect application performance. All mainstream PBX vendors now support UC capabilities alongside traditional telephony.

3. What are the advantages and benefits of SIP Trunking?

Based on eircom's own engagements with business customers who have adopted or are considering adopting SIP voice services, the following are the most frequently expected and realised benefits. Organisations considering adoption of SIP trunking can use the following breakdown as a starting point for their own business case development, optionally incorporating actual financials drawn from their operations to conduct cost-benefit analyses.

a]. Converged access, savings and simplicity

Some of the major enterprises where eircom has deployed VoIP services like SIP have realised cost savings of up to 50% compared to pre-implementation expenses on voice access and traffic. However SIP trunking is not a technology to be deployed with "low-cost" as the sole mindset or objective; in fact some SIP services currently offered on the market target the "low-cost" mindset and may leave enterprise organisations open to a risk of service disruption, as these services are far from carrier grade

That said, there are significant cost benefits which can be derived as an enterprise consolidates a dispersed telephony estate such as reduced access lines, and minimised PBX maintenance costs. Harder to quantify benefits also accrue to the organisation, including improved productivity across all sites. As noted above, it is vital that bandwidth and quality of service (QoS) be carefully managed on the enterprise network in order to maximise the potential benefits of SIP trunking. Service degradation can arise if enterprises have no ability to prioritise their most mission-critical traffic on a converged voice and data network.

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The opportunity to simplify infrastructure with SIP trunking is also clear, including consolidation to a single voice and data provider, centralisation of telephony into one or two SIP trunks, and easier administration of tasks like moves, adds and changes (MAC).

b]. Free on-net traffic

While the benefits of free on-net traffic can vary significantly depending on the number of in-house locations and the nature of a company's business, organisations with significant levels of interoffice calling may enjoy notable savings with SIP trunking. Using SIP, all interoffice calls become free, including calls to staff mobiles if the service provider offers this capability. Some of the most notable savings from free on-net traffic can arise from the reduction in mobile costs, and these estimates should be examined carefully when developing the business case for transition to SIP trunking.

c]. Scalability

SIP trunking is the first true alternative to ISDN to become available from carriers. The scalability of SIP is one of its most compelling selling points compared to ISDN, which can only be expanded in capacity by set numbers of channels. In the ISDN world, channel capacity comes in incremental fixed amounts (usually 2, 16 or 30); in addition a new minimum contract of at least 12 months is typically required. Yet a highly seasonal business may need enormously increased call capacity during very limited times of the year.

The short-term capacity increases enabled by SIP for scenarios like these make SIP an attractive option for businesses.

d]. Flexibility

SIP trunking can offer important flexibility in an enterprise, allowing it to better support the work of remote and mobile workers. For example some SIP providers offer capabilities that allow home-based workers to have a dedicated home phone mapped to their work number over the Internet. Calls to their extension can then ring at home. SIP trunking can also offer more management flexibility: for example a company can choose to present specific telephone numbers when making outbound calls.

e]. Call control from the network

Some service providers offer advanced SIP trunking services to include a range of call control capabilities that become available at the network level, rather than the PBX level. In truth these capabilities are not limited to just SIP services, but some service providers choose not to develop them on their traditional services. Capabilities normally restricted to non-geographic toll-free or toll-share phone services -- such as geo-dependent routing or rerouting on busy/no reply -- now become available to any enterprise on any inbound SIP trunking line. Other useful features controllable at the network level include blacklisting and white listing: allowing or prohibiting outbound calls to premium rate numbers, for example.

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f]. Voice quality

SIP trunking services can, depending on the network-level engineering at the service provider end, offer high definition voice services using the G.722 codec. This codec offers voice quality better than the standard PSTN network, which may be required for certain applications. High definition voice services can add an extra element of immediacy for collaboration, allowing both parties on a call to feel as if they're in the same room, even without the addition of video.

g]. Resilience

As mentioned above, businesses migrating to SIP trunking may elect to keep a subset of their ISDN infrastructure in order to give themselves technology resilience in voice services. This can typically be achieved at a similar or lower price point than the business has historically spent on voice services, delivering in some cases the organisation's first true resilience solution for voice. Organisations can also opt for carrier resilience by contracting with a second carrier for backup voice services, but be sure to investigate the source of a resilient carrier's solution, as it may be a resold wholesale product from your primary voice supplier. Also the onus is now on you to craft the end-to-end resilience. Often it can make more sense to secure a well-designed highly-available resilient solution from a single expert carrier. Resilience can also be delivered in SIP trunking by installing dual a second SIP trunk over a redundant data connection at a second location. Many large organisations for whom eircom delivered VoIP services work with us to build a clustered PBX environment, with automatic failover between two sites, and dual SIP trunks serving each site.

4. How does SIP relate to Unified Communications?

a]. Definition and benefits of Unified Communications

Unified communications is simply the integration of real-time and non-real-time communications, providing a consistent user experience regardless of the mode of communication used. The objective of unified communications is to improve productivity, collaboration, and flexibility, by making it easier to work and interact anytime, from any location, using any device.

Modes of communication include voice, video, instant messaging, e-mail and desktop sharing. Working locations can include a meeting room, home, Wi-Fi at a hotel, the desk, the car and more. Devices used can include a desk phone, laptop, tablet, or mobile. Delivering a consistent experience across all these modes, locations and devices is no small task but it's one that unified communications is tackling head-on.

b]. Benefits of Unified Communications

Improved productivity is the number one benefit of unified communications. It allows people to get past the default mode of “I’ll send an e-mail” when they need to request information. E-mail is not a real-time mode of communication and the worker may often forget what they have e-mailed or whether they have sent the message at all. When e-mail responses are sent in reply to a voicemail, the delays can pile up and days may pass between the initial impulse to seek information and the receipt of that information.

Unified communication makes it crystal clear who is available when for real-time interaction, which means information is pushed faster through an organisation, with obvious impacts of efficiency. The ability to enable faster communication and more efficient sourcing of information is at the heart of why unified communications enhances productivity.

The financial benefit of this improved productivity can be hard to quantify. What is the quantifiable cost to an organisation of a conference call where information exchange was poor, interaction was frustrated by bad audio or missing documents, and ideas weren’t freely shared? Consider the opposite scenario: what is the quantifiable benefit to the organisation of a productive meeting where attendees were able to build on each other’s ideas and create an output of real business value?

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c]. How SIP enables UC

Unified communications isn’t an afterthought as regards SIP; on the contrary, as an organisation looks at moving towards SIP trunking, potentially with the upgrade to an IP PBX, the organisation is likely to discover the UC conversation starting right at the hardware level with the IP PBX vendor. Most of the infrastructure vendors in this space are extending their offering to include the modes of communication that comprise UC, including voice, video, presence and messaging. And that UC support extends not just to the desk telephone, but to other endpoints such as a soft client, which allows a staff member’s laptop, smartphone or tablet to act like telephone extension. So any move towards IP-PBX almost by default becomes an obvious opportunity to investigate a roadmap towards UC for an organisation.

d]. Cloud vs. premise-based UC

Key unified communications capabilities are increasingly becoming available from SIP providers as cloud-based solutions, eliminating the need to buy or maintain an on-premises IP PBX. These capabilities include Web conferencing, audio and videoconferencing, IP telephony, peer-to-peer video, messaging and desktop sharing. This means that all the service logic, and all the applications, reside at the network level, with services being provided directly to all registered SIP endpoints in an organisation, including desk phones and staff mobiles. Businesses exploring migration towards SIP trunking and unified communications should be aware of cloud trends in UC, particularly as these services expand and offer new opportunities to minimise capital expenditure.

5. Things to consider when choosing a SIP solution

An informed deployment of SIP begins with the systematic analysis of the organisation's current network, business priorities and the service capabilities offered by competing SIP service providers. Based on our field deployments, the following constitute a prioritised list of the most important considerations in advance of deployment. This list is a good starting point for your discussions both internally and with potential SIP service providers as your business examines its option.

a]. Data network

Voice over IP solutions like SIP run over IP, so it is vital to consider the capabilities of the current enterprise data network. SIP offers the business a rare opportunity to review all of its data networking needs. Consider first whether your business plans to focus exclusively on voice infrastructure modernisation. In practice most organisations choose to take this opportunity to consider converging voice and data onto the same network, and to investigate the total network requirements to support and modernise access to business applications.

If the business decides to do so, it will be important to ensure QoS is available on the network; voice -- which is highly sensitive to delay and packet loss -- must be prioritised to ensure that more delay-tolerant traffic like e-mail and web browsing does not impact voice performance. SIP trunking provides a great opportunity for organisations to leverage investments in the data network, such as resilient HQ or datacentre links for voice. If the organisation decides to opt for a converged voice and data network it should also consider whether it wants to continue with separate voice and data suppliers or would rather take the opportunity to consolidate vendors as well.

b]. Carrier grade – fully geo-redundant

It is important to probe carefully in order to assess whether a provider's SIP services are carrier-grade. The risk arises where services which are labelled "SIP trunking" are revealed, on questioning, to be based upon less-than-dependable infrastructure, over insecure networks or to and from less-than-desirable locations. Non-carrier grade services may also have limitations such as scalability issues or lack of geographic redundancy.

A geo-redundant carrier-grade SIP service is one which allows the network (and its SIP trunking customers) to survive the catastrophic failure of an entire location in the carrier's network. Geo-redundancy is a defining feature of a carrier-grade, PSTN-quality SIP service. Ask questions of the SIP service providers under consideration by your business, including the levels of resilience in the network, what infrastructure supports the service and where the traffic is going. SIP services whose traffic does not stay fully within Ireland but rather travels across infrastructure in other jurisdictions may be a concern for certain organisations in public or financial sectors.

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c]. PBX rationalisation

Organisations which have grown over time frequently have multiple sites, each with its own PBX including different vendors, stages of maturity and maintenance arrangements. Organisations should consider whether they want to centralise their IP telephony estate or maintain their distributed architecture. With centralised IP telephony the organisation is connected to the outside world over a single SIP trunk, offering one telephony solution to serve the entire organisation (or two SIP trunks across different data centres for resilience).

The business should consider upfront the impact of consolidating PBX vendors and reducing PBX maintenance costs; the cost savings realised here may be pertinent to the development of the business case. If a distributed architecture is to be maintained, then the organisation should consider whether they need a SIP trunking service that can share numbering plans across sites and that creates a virtual private network for on-net calling across the organisation. Some carriers offer virtual trunks that can serve multiple premises in an integrated manner with channel capacity sharing between sites.

d]. Native vs. gateway integration

Will your business connect natively to SIP? Native integration is the normal scenario where an organisation has a fairly modern telephony infrastructure, and already owns or is about to buy an IP PBX that supports native SIP. The Gateway scenario is more common where organisations decide to move to SIP but want to retain an older in-house PBX. Gateway integration entails additional costs to purchase and maintain the Gateway, but it offers a stepping stone to SIP for organisations that are not ready to swap out their existing core PBX.

It is important, if you do plan native SIP integration, to understand which PBXs are natively compatible with the carrier's service. The risk arises where the carrier has not yet fully tested its SIP service with your particular IP PBX, so be careful to ask carriers for a complete list of IP PBXs which have been tested and proven compatible with their services. Also the issue of whether or not to use a Session Border Controller (SBC) comes to the fore when choosing native integration.

e]. Session Border Controller

It is always best-practice to deploy an enterprise SBC in conjunction with SIP trunking, however there is an associated cost, so the decision has to be made on an individual company basis. SBCs typically offer additional security features, a demarcation point with external networks and other interoperability and performance benefits.

The considerations for whether an SBC is needed or not could fill an entire paper on its own, however they comprise mainly of the type of network and service provider you are connected to, the security policies of the organisation, and what the PBX vendor and service provider recommend themselves.

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Investigate and consider whether you intend to use an enterprise Session Border Controller; where cost is not an issue most organisations will opt for the added security the SBC provides; however, working with a trusted provider of SIP services also adds a measure of security for your business. Investigate and budget for the SBC costs if your organisation decides it is a risk mitigation priority. An SBC can also help with interoperability issues between a service provider and your particular flavour of PBX.

f]. Access Diversity

The most vulnerable link in any service is in the last mile: there's always the risk that one zealous digger could cut communications to an entire site. An organisation that has decided to converge its voice and data networks loses the natural resilience of those separate connections and must recapture that resilience by planning for diversity. Options include building a separate access path into the building, or establishing a second trunk. Access diversity can also be provided by using an alternative technology to SIP such as wireless or ISDN.

g]. SIP Connect compliance

As noted above compliance to the industry-wide SIP Connect standard should be a prerequisite for any SIP service provider in the market. While the original SIP standard was somewhat loose and open to interpretation, SIP Connect is a robust standard covering direct IP peering between the service provider and the PBX hardware. If a service provider's service is not SIP Connect compliant, your business may be in for significant PBX problems, including difficulty with making calls, transferring calls, or number presentation for outbound calls.

h]. Support for evolutionary approach

It is a big task to centralise telephony services and renew PBX infrastructure across an entire dispersed estate. Many organisations have traffic patterns that follow the 80:20 rule, with a small number of large sites accounting for the majority of voice traffic. Inquire whether the service provider you're speaking with can cater for legacy sites to exist alongside SIP sites. Does the provider have the experience and the capability in supporting a hybrid environment? What incentives can they offer to ease the transition? For example, they may be able to ensure that all calls between ISDN and SIP are free of charge when those calls are inter-office (within your enterprise). Even the most aggressive SIP deployment are usually implemented in phases, which means a crossover of mixed legacy and new infrastructure is likely for most organisations.

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Questions to ask your SIP provider include: what is the provider's charging model to and from SIP sites and ISDN sites within the same enterprise? Can the provider offer a private numbering plan that will work across the entire enterprise network, irrespective of technology?

i]. Scalable solution with flexible capacity

It can be a shock for an enterprise to discover that the SIP trunking service it has purchased does not scale beyond a set number of channels, but surprises like this do happen in the market. Ask your SIP service provider probing questions to verify whether there are any technical or commercial limitations on the service. A service provider, for example, may “unlock” key benefits of SIP (such as flexibility and scalability) only where the customer agrees to long-term contracts.

j]. Number management

Are there important numbers that your enterprise must present to call recipients during an outbound call? What about advertised or well-known inbound numbers that you want to retain? VoIP numbers are typically non-geographic (the dialling prefix for SIP numbers in Ireland is 076), but it is possible to port geographic numbers onto these 076 numbers. Issues can arise if a business has not previously considered which of its numbers it needs to retain, so do think in advance what numbers you want migrated to your new SIP service.

There are two options to consider. A number which is fully ported over to SIP will no longer be housed on the PSTN and all calls to that number will be delivered over the associated SIP trunk to the customer’s site. The second option, offered by some SIP providers, is CLI mirroring; this is typically used where an organisation retains some of its ISDN circuits and continues to use the ISDN numbers for inbound, but uses SIP for outbound calls. CLI mirroring allows the organisation to present that traditional ISDN number to the call recipient for outbound calls.

The chief consideration with number management is to plan ahead. Lead times apply if you intend to port your existing numbers across to SIP, especially if you are changing providers. While number portability is not new, the procedures for porting are more mature in the PSTN world than in the SIP world, and it’s best to plan far in advance if your intention is to retain key numbers for your business.

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k]. Fixed-mobile integration

As mentioned earlier, one area of significant cost reduction with SIP is the ability to reduce mobile charges. A typical enterprise has staff members with fixed numbers, mobile numbers, or both. Speak with the providers you’re investigating to determine whether they have the ability to classify all calls as on-net if those calls are to and from fixed mobile endpoints on the company’s own SIP network.

In addition to cost savings, there are softer productivity benefits here, as well, as staff members may feel freer to call staff mobiles if they’re aware that all internal calls are free in your organisation.

Ask your provider if there is a way to extend the life of your current enterprise numbering plan; for example, can your SIP mobile users still dial a four-digit extension short code to reach a colleague elsewhere in the enterprise? What is your provider's plan for facilitating greater fixed-mobile integration down the road – are there plans for multiple device ringing (where an incoming call can ring the desk phone, softphone, mobile phone or all three)? What number will present when making a call from staff mobiles – is there the ability to present the desk phone extension or a general company number in order to mask the staff member's mobile number?

l]. Support for inbound call control

What capabilities exist at the provider's network level? If call routing capabilities – including those mentioned above, such as reroute on no reply or reroute on busy – exist at the network level, there can be advantages for the enterprise, as routing burdens are removed from the on-site PBX hardware. Enterprise-wide whitelists and blacklists are also convenient when manageable at the network level, removing the requirement for the organisation to program multiple PBXs.

m]. Multi-codec support – G.729, G.711, G.722

On the surface it may seem that audio codecs don't impact the enterprise, but it's important to ask SIP service providers which codecs they offer. There can be tremendous bandwidth differences; for example, if a satellite office with maximum upstream bandwidth of 150 Kbps is migrated onto a SIP voice service that is forced to use a high-definition codec, they may face severe restrictions, finding themselves able to make just one phone call at a time. Where an office's data link is being used for voice calls as well as data traffic, bandwidth requirements need to be calculated, estimated and provisioned for accurately in order to ensure a quality experience. If high-definition voice quality is required, then ensure the carrier offers that as an option.

n]. Support for remote access / home working solutions

Is your organisation keen to support remote and home workers as it migrates to SIP? Or do you plan to use the new SIP trunk to connect to your in-house IP PBX, and nothing more? Some providers offer remote worker solutions that allow a business to put a desk phone extension inside a staff member's home, connected via broadband; work calls can be routed to that extension and other in-office features are available, such as extension dialling. If support for remote working is a priority for your organisation, do remember to ask your SIP provider if it offers network support for remote workers.

Try to work with a service provider who has experience in managing VoIP migrations in your local market.

o]. Engineering and project management skills

Depending on the size and complexity of the business that's considering moving to SIP, it is not a trivial task to weigh all the factors involved, including analyzing the company's data network, PBXs, routers, switches, QoS requirements, bandwidth requirements, and its preferred speed of migration (whether big-bang or a slow and evolutionary). Try to work with a service provider who has experience in managing VoIP migrations in your local market. It may be the case that your business has extensive experience in-house and requires nothing more than the equipment from a service provider; but many enterprises do not have the expertise and will be reliant on a service provider's ability to provide engineers with field experience of VoIP migration.

Questions to ask your service provider include: how long has the company provided VoIP services in the market? What is their heritage in data networking? Ask the provider what their recommendation would be in key areas highlighted above in this white paper, and assess whether the responses are detailed and knowledgeable. Does the provider offer design and installation? What SLA's do they offer around installation and delivery?

p]. Future-proof roadmap

Whichever service provider you choose, assess their current capabilities as well as their future roadmap. Are they continuing to invest in the infrastructure that supports their SIP service? SIP trunking services are often a carrier's first offering, with additional network-based or hosted voice services and unified communications services due to follow on. An enterprise may have the opportunity to time its migration towards advanced services in order to stay in step with a carrier's planned offerings, to minimise its own capital expenditure and take advantage of new services as they emerge.

6. Conclusion: next steps for SIP and the enterprise

This document has provided an introduction to the most important considerations for any organisation examining the SIP opportunity. Most important of all, however, is to take a step back and think carefully about the reasons your business is considering SIP. Quite apart from the core drivers motivating your SIP project, your business may discover an opportunity to derive additional efficiencies and cost savings as you examine other parts of your infrastructure and your existing supplier relationships.

No business can survive without the voice services that are the heartbeat of its communications. SIP offers a unique opportunity not only to deploy an efficient, PSTN-quality voice service for the enterprise, but also to lay the foundations for long-term evolutionary change, providing a future-proofed infrastructure for higher levels of collaboration and media-rich communication.

Carrier-class SIP voice services are based on the next-generation communications infrastructure over which all voice traffic will ultimately be carried. Major carriers around the world are pursuing roadmaps which include the retirement of PSTN. As carrier-class PSTN is replaced by carrier-class SIP -- engineered to world-class standards and using world-class vendors -- voice over IP has itself evolved from an early-adopter novelty to an enterprise must-have.

Organisations are increasingly recognising that SIP is more than just a stepping stone to the world of voice-data convergence; it's an evolution that opens a world of possibilities in terms of productivity and efficiency.

Apart from the core drivers motivating your SIP project, your business may discover an opportunity to derive additional efficiencies and cost savings as you examine other parts of your infrastructure and your existing supplier relationships.

For more information

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