E-Guide

IP telephony trends: Migrating from PSTN to SIP trunking
Top 5 trends in enterprise IP telephony

So you’ve completed your enterprise IP telephony implementation, your systems are running without incident, and every person you meet in the hall stops you to shake your hand for all that you have done to improve their lives. It’s time to kick back and relax, right? Not quite. New options and services present challenges and opportunities to improve collaboration and reduce costs. So what comes next after full-scale enterprise IP telephony deployment?

In our research and consulting interviews with IT architects, we see the rise of five distinct trends in enterprise IP telephony shaping communications going forward:

1. Unified communications: While often a confusing term, we define UC as the joining of various real-time communications applications into a suite of integrated collaboration services. For most, this means tying telephony together with instant messaging, conferencing, unified messaging and video—enabling users to see each other’s presence status and initiate any form of communications via a single application. Over 60% of companies have some UC implementation under way, often starting with IM-telephony-presence integration before moving on to additional applications.

2. SIP trunking: Replacing legacy PSTN access with SIP-based services can reduce costs and improve flexibility for call routing, mobility integration and
disaster recovery. On average, companies save anywhere from 20-60% off their PSTN access bill when they move to SIP trunking. Those that centralize access realize the largest savings. A successful SIP trunking initiative does involve addressing some challenges, most notably the need to support fax, E911 and performance management across SIP trunks, as well as potentially revising your dial plan.

3. Video: Is video the next voice? Perhaps. As quality improves, prices fall, and workers are increasingly distributed, we are seeing an increase in video conferencing adoption. Desktop video is now an inherent feature in most UC platforms, while vendors including Avaya, Cisco, Microsoft and Polycom enable integration of UC desktop apps with room and immersive telepresence systems. Video hasn’t quite emerged as a replacement for voice, but we do see desktop video conferencing growing, primarily to enable distributed workers to join room-based meetings.

4. Virtualization: In the last few years, VoIP vendors including Avaya, Cisco, Microsoft, Mitel and Siemens have ported their IP PBX software to virtual appliances or general purpose hypervisors, enabling their customers to take advantage of lower infrastructure and operating costs. Now some of those same vendors are working to support voice and video via virtual desktop infrastructure (VDI). VDI raises some particular thorny challenges thanks to the need to localize voice/video encapsulation, but it also offers the potential to reduce capital and operational expenses at the desktop.

5. Mobility: One of the most frequent questions I get is, “can I get rid of my desktop phones?” Companies are actively looking at extending telephony and UC capabilities to mobile users across a range of smartphone and tablet devices. While the ability to eliminate the expensive desktop phone (and the required Ethernet infrastructure) is attractive, be aware that mobile voice services require careful attention to wireless LAN (WLAN) architecture. For those on public wireless services, voice quality still lags behind that of a hard phone. Still, we see growing use cases, especially for field workers, where simply provisioning an integrated mobile phone makes a great deal of sense.
Now is not the time to rest on your laurels. While the enterprise IP telephony market is indeed maturing, there are still significant opportunities to reduce costs, improve services and drive innovation in your organization.

**Migrating from PSTN to SIP trunking: A primer**

*By: Michael Brandenburg, Technical Editor*

SIP trunking offers enterprises a number of benefits over traditional analog or digital PRI connections. By carrying voice traffic over an Internet link, an organization can lower its costs. Migrating from PSTN to SIP trunks, however, involves more than simply adding a few more voice channels. UC managers must select a provider that meets the voice and unified communications needs of the enterprise and has the ability to collaborate with the networking team to ensure a secure and quality connection to Internet-based VoIP services.

**Choosing a SIP trunking provider**

Unlike the traditional voice services market, incumbent local exchange carriers (ILECs) and the competitive local exchange carriers (CLECs) that run on the incumbents' copper are not the only options for enterprises that are shopping for a SIP trunking provider. A number of Internet service providers offer SIP trunking services alongside their broadband access offerings, offering an alternative to ILECs and CLECs.

Not all SIP trunks are alike. SIP is an industry standard protocol, but actual implementation and interoperability among IP telephony vendors and SIP trunking providers can vary. Before committing to a particular SIP trunking provider, a UC manager should ensure that its service has been tested with the enterprise's installed PBX or IP telephony solution. Interoperability testing between SIP trunking service providers and the enterprise's chosen UC platform will ensure a smooth deployment and should be high on the list of priorities in the evaluation process.

When evaluating SIP trunking services and providers, UC managers should also consult with their enterprise’s networking team on the service-level
agreements (SLA). Standard SLAs vary greatly among both providers and the type of services that an enterprise subscribes to. Unlike traditional analog or digital line service providers, a SIP trunking provider may not control any aspect of the connection that brings its service into an organization once it leaves the provider’s own network. As such, an SLA between provider and subscriber will only apply to the components the provider can control.

Bandwidth.com, for example, denotes three different levels of support for its SIP trunking offerings, based on how much reach the provider has into the customer network. If the customer is also a subscriber of Bandwidth.com’s Internet service and has purchased a router from the vendor, the provider will guarantee the quality of service for the SIP trunks all the way to the customer premise. However, if the customer uses a third-party Internet access and its own router, Bandwidth.com’s support ends at its own network.

Some UC vendors simplified the process for customers by packaging their UC products with SIP trunking services from service provider partners. These branded solutions offer small- and medium-sized enterprises one stop shopping for their UC products.

“Many of our Mitel customers are going directly through Mitel for their SIP trunking,” said Tim McNicoll, technology solution sales manager at Wisconsin-based Heartland Business Systems, a value-added reseller of unified communications solutions.

Getting connected to SIP trunks: From PSTN to SIP
A conversion from PSTN lines to SIP trunking services shares many of the same steps of any other telecom migration. SIP trunking providers support number portability, so an organization’s numbers can remain intact. Bandwidth.com suggests that customers submit number porting requests to their incumbent providers one or two weeks before the install date to ensure a smooth transition.

“We recommend our customers install their SIP trunks with temporary phone numbers to make sure the connection works with their system before their own numbers port in,” said McNicoll. When deploying SIP trunks, the enterprise must also determine its bandwidth needs. Experts on
TechTarget’s IT Knowledge Exchange suggest that around 90 Kbps of bandwidth per line of voice traffic, combined with appropriate QoS prioritization, is needed on top of other traffic on the wide area network. However, UC managers should consult with their SIP trunking provider to determine specific requirements.

SIP trunking providers also vary in how they connect to the enterprise’s UC platform. SIP trunking utilizes an enterprise’s Internet connection, so the networking team will need to reconfigure the corporate firewall to allow SIP traffic to reach its destination within the enterprise. Simply directing ports to the IP telephony platform, however, could expose the platform to denial of service (DoS) attacks or other security threats. Instead, enterprises should consider deploying session border controllers at the network edge to secure these VoIP links. Enterprises can overcome these challenges to SIP trunking if the UC, WAN and network teams work together to ensure a smooth transition of services.

Interfacing SIP trunks with the IP telephony platform will vary by vendor and the exact enterprise deployment, but most modern UC solutions now provide native SIP support. Connecting legacy circuit-based PBX systems is a different story. An enterprise will need an IP telephony gateway to link the IP-based SIP trunks to the PBX as traditional voice circuits, enabling enterprises on older phone systems to take advantage of the benefits of low cost SIP trunking.
Free resources for technology professionals
TechTarget publishes targeted technology media that address your need for information and resources for researching products, developing strategy and making cost-effective purchase decisions. Our network of technology-specific Web sites gives you access to industry experts, independent content and analysis and the Web’s largest library of vendor-provided white papers, webcasts, podcasts, videos, virtual trade shows, research reports and more—drawing on the rich R&D resources of technology providers to address market trends, challenges and solutions. Our live events and virtual seminars give you access to vendor neutral, expert commentary and advice on the issues and challenges you face daily. Our social community IT Knowledge Exchange allows you to share real world information in real time with peers and experts.

What makes TechTarget unique?
TechTarget is squarely focused on the enterprise IT space. Our team of editors and network of industry experts provide the richest, most relevant content to IT professionals and management. We leverage the immediacy of the Web, the networking and face-to-face opportunities of events and virtual events, and the ability to interact with peers—all to create compelling and actionable information for enterprise IT professionals across all industries and markets.

Related TechTarget Websites
➤ SearchNetworking
➤ SearchCloudProvider
➤ SearchEnterpriseWAN
➤ SearchMobileComputing
➤ SearchTelecom