Where and How to Deploy IP Telephony

You are considering deploying the latest in telephony technology, an Internet Protocol (IP)-based phone system. Perhaps you have an executive mandate to migrate to all-IP. Or, perhaps you just want to make certain your company is fully leveraging the benefits of state-of-the-art technologies. Regardless of the reasons, you are faced with the choice of where and how to deploy this technology. Do you begin at the edges with your smaller offices or teleworkers? Or, do you start with an internal trial, perhaps your own IT department? This article will give you some suggestions on a variety of rational approaches to deploying this new technology with an emphasis on minimizing disruption to current users and maximizing the benefits your company will derive from an IP telephone system.

Six different scenarios are identified and described in this article. They start with the easiest, least complex implementations and increase in difficulty and complexity. They are:

1) Small office key system or Centrex replacement
2) Departmental solution
3) Temporary phone system for project team or highly mobile workforce (e.g.: construction site, project team, etc.)
4) Campus expansion
5) Leveraging IP broadband services to deliver phone service to teleworkers
6) Multimedia IP contact center

Small Office Key System or Centrex Replacement

An IP telephone system is a natural fit for small offices that have traditionally relied on key systems, Centrex services or analog POTS (Plain Old Telephone Service) lines. Since connectivity to the corporate IP intranet has become almost de facto, even the smallest branch offices usually have LAN and WAN connectivity. It's relatively easy to place an IP-based communication server, such as Siemens HiPath 5300, in these offices. Simply plug IP phones into Ethernet LAN switches and you're off and running. Depending upon the size of the office and the topology and bandwidth available on your intranet, you may not even need to place a system at each office. Trunking to the PSTN can be local to the branch office or centralized back at corporate headquarters, again depending upon network bandwidth availability and calling patterns (e.g.: local calls versus long distance).

The real benefits of using IP for small offices begin as these users are now able to access messaging, corporate dialing plans and other applications previously available only to employees located at headquarters or larger sites. Now, even employees at the smallest and most remote offices can access voice mail or unified messaging and dial anyone in the company with four or five digits. An added benefit is the potential to save money on long-distance phone bills by using the corporate IP network instead of the public network.

Departmental Solution

The challenge of how to migrate an entire enterprise to IP can be addressed by starting small and gradually expanding throughout the enterprise. One such approach involves migrating one department at a time, generally starting with the IT department in order to gain real-life experience with the technology. As time progresses, other departments can be added as moves, network upgrades or demand for new services arise. Since IP telephone systems are location independent, it is not essential that the entire department be located on the same floor or even in the same building.

Siemens HiPath 5000 systems can be smoothly integrated with your existing Hicom or other PBX. This means that trunking can be concentrated in the PBX, providing an economy of scale not possible with a standalone IP telephone system. Of course, access to the enterprise messaging system and common dialing plans are supported as well, meaning users will be minimally impacted by the transition to IP. By combining the small office deployment with the departmental solution, you are well on your way down the migration path to IP - the HiPath.

Temporary Phone System for Project Team or "Tiger Team"

Providing telephone service to a construction project, campaign headquarters or other temporary project can be challenging and expensive. Usually these project teams must settle for Centrex or POTS service because it's too expensive to build the infrastructure necessary to support enterprise class telephone systems for the short time that the project team will be active. By using an IP telephone system and the IP-based corporate intranet, project teams can have access to the features and applications they use when they are back at their regular offices. Just as with the departmental and branch office solutions described above, project team members will have access to the enterprise messaging system, enterprise dialing plans and PBX trunking.

Users can choose between desktop IP telephones, wireless IP telephones or soft phone applications. IP telephones are simply plugged into local Ethernet switches, while highly mobile team members may decide to use wireless IP telephones such as Symbol Technologies H.323 compliant phones. Other project team members may opt to use optiClient applications and forego telephones entirely when at the project site. If space is at a premium, the slim 19' rack mounted Siemens HiPath 5300 system can be easily installed in even the most cramped facilities. Lastly, local PSTN trunking can be provided at the project site or all traffic may be carried over the enterprise WAN back to headquarters and handed off to the Hicom or other PBX system.

Campus Expansion

As businesses grow and corporate campuses expand, it can be challenging for the telecom staff to keep up with demand for new telephone services. New buildings on campus may be out of the range of traditional copper cabling, or perhaps located across a street with no right-of-way access. It is also possible that the capacity of the existing PBX has been maximized and the telecom staff are faced with the option of upgrading or replacing that system. There is another option: an IP telephone system. New buildings make use of an IP telephone system such as Siemens HiPath 5500 and are connected to the rest of the campus over private fiber, public leased services or even wireless Ethernet. In the case of lack of capacity in the existing PBX, new employees are placed on the IP system. As with the solutions described above, Siemens HiPath 5300 and 5500 systems can be located in the switch room or data center and integrated with the existing Hicom or other PBX system to provide access to the enterprise messaging system, enterprise

dialing plans and PBX trunking. This solution minimizes the impact to new users, at the same time maximizing the value of the existing PBX system and reducing the need to upgrade or replace that system.

Leverage IP Broadband Services to Deliver Voice to Teleworkers

With the rapid advancement in broadband IP services such as DSL to residential users, it is now possible to deliver business-quality voice and high-bandwidth data connections over the same network. This makes it possible for teleworkers to log into the corporate intranet from their homes and have access to voice and data applications as if they are in their offices, with no degradation in performance, quality or features.

An IP telephone system such as Siemens HiPath 5300 or 5500 is installed at corporate headquarters and either optiPoint IP telephones or optiClient soft phone applications are installed in teleworkers' home offices. When teleworkers log on to the system by launching their optiClient application or logging on to their optiPoint phone, the system automatically routes incoming calls to their IP address, without the calling party being aware the teleworker is not in the corporate office. Outgoing calls are routed over the corporate intranet to headquarters and then handed to the PSTN, allowing the company to take advantage of negotiated toll discounts or toll bypass, assuming VoIP has been implemented throughout the corporate intranet. An added benefit of centralizing trunking at corporate headquarters is that service restrictions can be implemented and teleworkers' calls can be tracked for call accounting and billing use.

Multimedia IP Contact Center

As contact center traffic shifts from 90 percent voice to a blend of voice, fax, email and Internet chat there is an increasing demand for a single system that can deliver all of these media simultaneously to agents' desktops. But it's not enough to deliver these separate communications media to the same desktop; the traffic must be prioritized and presented in a single blended application, over a single network. And, each of these communication media must be visible to the contact center supervisor in both real time and as historical data for use in staffing and planning. The solution to this problem is a multimedia IP contact center.

The IP contact center begins with an IP telephone system that supports open interfaces such as TAPI, JTAPI and CSTA. By integrating sophisticated routing engines such as Siemens HiPath ProCenter with the IP telephone system, the IP contact center is created. Additional applications such as sales automation tools, trouble ticketing and databases (e.g.: Siebel, Remedy and SAP) can also be integrated into the contact center solution, providing a complete eCRM solution. Since all of the applications, including the telephone system and endpoints, are IP-based, the need for expensive CTI and customization is minimized. Furthermore, since the IP telephone system supports open APIs, a greater variety of out-of-box applications can be integrated into the contact center environment.