

IP NETWORK:

Smooth and Pure

The IP network at Xerox Modicorp's Gurgaon facility is not just up and running, but compares well with traditional circuit-switched networks

Notwithstanding the numerous benefits promised by IP, few actual deployments in the space have taken place in the past recent months. Enterprises are still either in the wait-and-watch mode or have just not given enough thought to IP. While regulations prohibiting the use of integrated voice and



data network have done their bit in holding enterprises from going the IP way, the fact that businesses are content with their circuit switches has an equally important role to play.

There are exceptions though. Gurgaon-based Xerox Modicorp is one organization to have deployed a pure IP network. And even though due to regulations prohibiting integration of voice and data networks, the company is yet to taste the fruits of convergence, it is benefiting in many other ways from its IP network.

Xerox WAN First, let's look at Xerox's Wide Area Network (WAN). In March-April 2001, the company was using a TDMA VSAT-based network having a shared bandwidth capacity of 48 kbps. The service provider was HECL. The VSAT network was being used for de-centralized applications and messaging. While the applications were UNIX Ingres-based, messaging was being done through Lotus Notes. Around that time, Xerox globally decided to migrate from UNIX Ingres to Oracle Apps ERP, and from Lotus Notes to MS Exchange. Both these required higher bandwidth. "The TDMA bandwidth was prohibitively expensive even though it was highly reliable. Besides, scalability was also an issue with TDMA. So we started looking at various options," Maninder Singh, senior manager, Xerox, says.

Options then considered by Xerox included a private leased-line network, PAMA VSAT and VPN. "We found VPN to be the best in terms of scalability and cost effectiveness or value for money," Singh reveals. And as far as security issues on a VPN network were concerned, those were duly addressed by using the necessary technology. "We put up tunnels and encryption so that not even the VPN service provider could access our end points," Singh points out.



“We were early adopters of IP, and the deployment expertise too was not very mature. That was one of the major reasons why we faced initial problems”

Xerox chose Wipro Net as its VPN service provider, primarily because of the latter’s reach and technological expertise available across the country. “They could provide service in all Xerox locations across India,” Singh elucidates.

“At that point of time, even though Xerox needed a 64-kbps point-to-point link from Xerox offices to Wipro Net PoPs, it decided to have a 2-Mbps physical link. We went for a 2-Mbps bandwidth because we knew we would need to scale up requirements. And it proved to be the right decision,” Singh recalls, adding that as Xerox now begins to deploy ERP, it needs 128-512 kbps at branch offices and 1.5 Mbps at the head office where the ERP server is located.

At present, due to regulatory restrictions, Xerox’s VPN-based WAN is used just for data traffic, but it can be voice-enabled at a very small cost, at just a day’s notice. “The entire technology is scaling very well. We can upgrade the bandwidth in two days flat,” Singh says.

Xerox is now in the process of deploying a PAMA VSAT link for two of its remote locations—its factory at Rampur (UP) and its national logistic center on the Hyderabad-Nagpur highway. Acquiring an OFC link for the Rampur factory is also being explored.

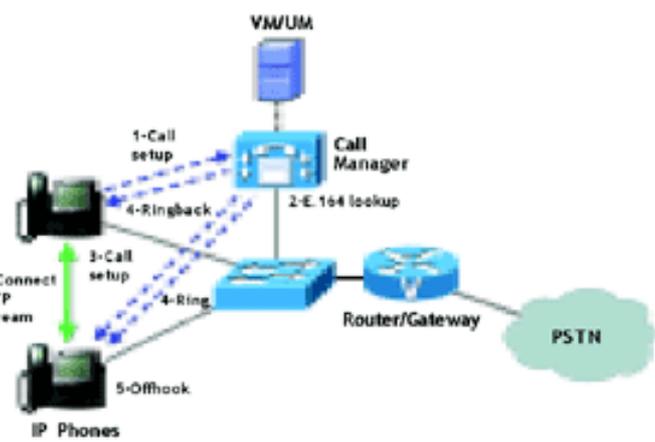
The Dream Network Xerox has deployed a Cisco AVVID (Architecture for Voice, Video and Integrated Data) VoIP telephony network at the head office. The company has two primary rate interfaces (PRI) of 30 channels, each terminating at a Layer 3 switch. The network consists of two call managers in cluster mode for providing redundancy, a voice mail server (running on exchange and SQL server) and 210 IP phones at the user end.

Datacraft was the integrator for the IP telephony network. The network was deployed in March 2001. “When this was deployed, we had many problems ranging from functionality and configuration for optimal usage. It took six months to stabilize,” Singh observes. “We faced problems like no-ring back and high-processor utilization on the call manager, resulting in call dropping. Besides, the auto-attendant script was not fine-tuned.

Apparently, we were one of the very early adopters of IP and the deployment expertise was not very mature. This was the major reason we faced all these problems. Besides, we had very high expectations from the new network,” he enumerates.

Both Datacraft and Cisco helped Xerox sort out these problems over a period of six months. Some of the problems were solved by a new version of call manager and in-house work on auto-attendant script. “We also did a lot of work on custom reports for analyzing traffic. Now, we are very comfortable with the system and it is working like a dream,” Singh says.

Basic Call Processing in IP Telephony



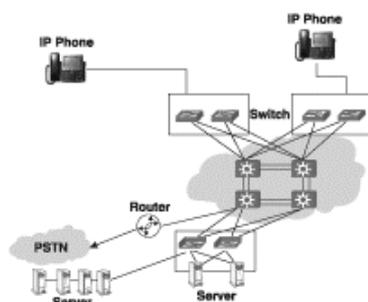


According to Singh, the biggest advantage of the AVVID network is its functionality and configuration on the call manager. “It offers limitless possibilities and features like intelligent routing.

The voice mail server is capable of integrating applications like fax, e-mail and voice into a central depository accessible by a common front-end. But today, it’s not legally allowed. The IP network has allowed us to deploy better access control and security systems. It also allows us to report and analyze network traffic, thereby allowing proactive steps to be taken,” he adds. He claims that AVVID is quite user-friendly and it did not require much user training to learn about new features.

The AVVID network is being maintained by Datacraft, which has a team of professionals stationed at the site.

AVVID Voice Architecture



Singh says that reliability of the IP network has not been an issue with the company. “At Xerox, we have been running our data network on IP for a long time. So we are fairly aware as to where IP stands, in terms of reliability. We also used a number of network monitoring tools for testing reliability,” he points out.

While the initial investment in the voice network was much more expensive than a traditional circuit-switched PBX network, Xerox hopes to gain in the long run in terms of huge cost benefits. Besides, the network is scalable at a zero cost.

In Singh’s opinion, the biggest advantage of the IP network lies in terms of functionality. And, convergence of voice and data would be a major value addition, once the government allows that.

Advise for Others “Enterprises planning to deploy an IP network should choose their integration partners carefully. In particular, one should look at the technical skills and adequate experience in them. It should be kept in mind that a pure data network expert does not automatically qualify as a good voice integrator,” Singh emphasizes. Also, enterprises should look at the entire gamut of offerings and a network should not be seen as just a voice solution. They should also see what all operations can be leveraged, he suggests.

Did Xerox commit any mistake? “We committed the mistake of assuming that certain features will be as good as they were in circuit-switched networks. It should be kept in mind that things are much different in an IP network and not every word of the vendor can be taken for granted,” he cautions. And last but not the least, users should not forget to read the rule book carefully for regulations related to voice and data integration.