Aspen Valley Hospital—Reducing Costs and Providing Patient Care Faster and More Effectively with Cisco IP Communications

Background

Aspen Valley Hospital (AVH) located in Aspen, Colorado is a 49-bed community hospital that represents the best of two worlds—the warmth and friendliness of a small town, and the technical expertise of a major medical center. Although orthopedics and sports injuries are the hospital's primary focus, AVH offers a full range of services. With board-certified specialists in 25 different fields of medicine, AVH also provides such services as diagnostic imaging, physical therapy, inpatient and ambulatory surgery, and cardiopulmonary rehabilitation. AVH is fully accredited by the Joint Commission on Accreditation of Healthcare Organizations and is affiliated with VHA, (a nationwide organization comprised of nonprofit community hospitals) and the Aspen Valley Medical Foundation.

Challenge

"For more than 13 years, we had been using the same PBX phone system," says Ryan Edwards, IT project manager. "It could no longer handle our current requirements, and did not allow us to expand to accommodate new growth. In addition to supporting the main hospital, we had added eight remote facilities including physician practices and outpatient clinics with six disparate phone systems that were too expensive to maintain. Plus, with all the various brand names and phone systems in place, there was no sensible way to tie it all together."

There were a number of business drivers for replacing the hospital's existing telephony solution, a legacy system, which consisted of Siemens Rolm systems and older Toshiba PBXs.

First, the system was out of ports, forcing a complete upgrade for growth and new services such as more feature-rich voice mail functionality and improved call transfer and conference calling capabilities. Second, the system needed to safeguard against failure with redundancy and disaster recovery in place—features that were not available in the existing system. Third, the system was very costly. "We paid on average more than US$20,000 per month for voice and data charges for all of our lines, regardless of how heavily the lines were used," explains Edwards. "We saw a real opportunity to reduce expenses through reducing the number of required circuits and exploiting the synergies of moving towards a converged network of voice, video, and data, all possible through deploying an IP Communications solution."

"Our phone system was antiquated and lacked the features that allowed our users to reach optimum productivity," Edwards recalls. "Initiating a conference call was complex and near-impossible for most users. Voice calls could not be forwarded from one number to another, and callers were frustrated with our lack of call management functionality."

Aspen Valley Hospital took its first steps towards meeting these challenges in 2002 when it invited Cisco Systems and traditional PBX vendors—including Avaya and Siemens—to present their recommendations for addressing the hospital's current challenges, while also providing a platform from which to add new applications and capabilities, along with new remote facilities over time.

Solution

Despite AVH's comfort and existing knowledge of traditional PBX systems, it was quickly evident that Siemens and Avaya PBX solutions did not offer the cost savings AVH expected in terms of system cost and installation, nor did they offer the savings associated with supporting one converged network for voice, data, and video. Additionally, most of the value-added voice services required to better support physicians, patients, and business partners were not available.

For AVH, the convergence of voice, video, and data on a single IP network offered the opportunity to lower network costs and optimize communications. Enabled by Cisco AVVID (Architecture for Voice, Video and Integrated Data), Cisco IP Communications solutions provide AVH with the ability to better manage its IT network, provide value-added services, and serve as a platform for emerging convergence-driven applications.

Edwards explains, "The call to IP was hard to ignore. We were able to eliminate PBX equipment costs such as phones, line cards, trunk cards, and system software because we could easily accommodate the number of phones with the Cisco CallManager. We could significantly lower costs associated with moves, adds, and changes and we could also eliminate costly hardware upgrades when user threshold is reached. Plus, we could leverage resources with a single IT staff to provide IP telephony support."

Verna Bartlett, AVH's chief financial officer, played a key role in ultimately deciding to adopt Cisco IP Communications solutions as the backbone of the hospital's computing platform. Utilizing the Cisco Network Investment Calculator, Bartlett worked with her Cisco account team to compute the hospital's return on investment prior to making her recommendation to the company's board of directors. She was pleased to find that an investment in a Cisco solution would provide an immediate and tangible ROI for AVH. For example, AVH projected that it would realize an annual operating cost savings of more than 70 percent.

The AVH solution includes Cisco CallManager, the software-based call processing component of the Cisco IP telephony solution, Cisco 7910, 7940, and 7960 IP phones, Cisco Unity Unified Messaging, which delivers every e-mail, voice, and fax message to a single inbox, Cisco Catalyst series switches, and Cisco VG 200 Gateways.

After selecting Cisco IP Communications solutions in July 2002, AVH began work on configuring the new system, with installation planned for September. "By October, we were live," explains Edwards. "And in just two days, we completed the transfer from our old PBX system to Cisco IP. Deployment went very smoothly."

Today, AVH maintains about 350 IP phones at the main hospital and another 150 IP phones at eight clinics and billing centers in the region.

Results

Aspen Valley Hospital is reaping a wide variety of quantitative and qualitative benefits from its new IP-based system.

Prior to implementing Cisco's IP Communications solution, AVH was spending more than US$20,000 monthly on communications charges for voice and data. Today, that expenditure has dropped to just under US$10,000—saving more than 50 percent immediately. Using a formula based on system usage, AVH has calculated its savings from employee productivity enhancements to be nearly US$15,000 monthly. And, in total, AVH has experienced an annual operating cost savings of more than 70 percent.

Pete Sebenaler, materials management supervisor, notes additional benefits from moving to IP. "Our users have increased mobility. Doctors can roam from the hospital to clinics using the same telephone, softphone, or pager. And, we've been able to centralize our PBX operator. This allows us to transfer calls to our remote offices so a patient can be connected to his doctor seamlessly by calling into one central number."

The system has performed well and users are talking about the additional functionality offered by Cisco Unity. Sebenaler explains, "For me, a big advantage is the ability to access my single mail box from any communications device. I commute between two offices and enjoy the flexibility of taking my laptop along to access both voice mail and e-mail from the same device. Minimally, I save at least one hour per day by taking advantage of this productivity-enhancing capability."

New users have found the system very easy to use and were often up and running after attending one 30 to 45 minute training session. The XML capabilities of the Cisco IP Phones enable users to more quickly jump into a conference call, where the traditional system often required the help of IT. Additionally, some users do not have an IP phone at the hospital or at its remote facilities, but still need to be connected to the hospital's staff. Calls are then automatically forwarded to a cell phone, or a land line.

Integrating two disparate networks, voice and data, into one converged infrastructure also enabled AVH to add video capabilities. "We originally had a site-to-site video conferencing network via ISDN, but we weren't able to videoconference over our network before going IP," explains Edwards. "With Cisco IP telephony, we can participate in videoconferences across the WAN via our Polycom system, rather than via ISDN. This results in an additional cost savings of $500 monthly."

The ability to centralize call-processing functions was important to AVH as it looked to manage support of its eight remote facilities. "Since CallManager can be clustered, we were able to centralize our operations—a key benefit. Additionally, CallManager is much easier to administer than a traditional PBX system," says Edwards. "The interface is Web-based, making it very easy to understand call setup and call flows."

For a hospital, downtime can mean a matter of life or death. That's why a solution with proven disaster recovery and redundancy capabilities was critical. For AVH, Cisco provides the assurance and reputation the hospital needs to guarantee high availability and quality of service.

AVH is just beginning to understand the power of its new IP Communications platform. According to Edwards, "Before we had installed the Cisco solution, we could have never understood the full force of what we have available to us. Now, it is only our imaginations that will hold us back."

As AVH continues to test its new communications infrastructure, it will develop and roll out new services that will be available on it and be accessible using the Cisco IP Phones. For example, if a patient suffers a heart attack in its Emergency Room and a Code Blue is called, four people need to be immediately alerted. Rather than calling four separate numbers, AVH has created an application that integrates its code services into a dispatch service and automatically dials out to each of those key people. AVH is looking to expand this one-call capability to include 911.

"It's amazing to see what our new system can do today, compared with our previous system," says Edwards. The new Cisco IP Communications system will continue to provide a platform for the further evolution of the Aspen Valley Hospital network infrastructure.

CISCO SYSTEMS