Partners Collaborate to Help College Stay Competitive

In today's competitive environment, every market benefits from employing the latest in information technology. The higher education market is no exception. Not only must colleges and universities provide exceptional curricula, they must offer state-of-the-art resources and information services in order to attract and retain students.

Menlo College is a four-year private college in Atherton, California, located midway between Silicon Valley and San Francisco. Established in 1927, the college is chartered today with preparing some 700 students from 40 nations to succeed in the competitive global marketplace of the 21st century, a challenge it meets by coupling an outstanding liberal arts curriculum with access to the highly-regarded professional communities nearby.

"Menlo College competes with a number of respected colleges and universities in the Bay Area," said Patrick Olson, Director of Information Technology for Menlo College, "We were depending solely on a shared, 10-megabit Ethernet Cabletron local-area network (LAN) that served just four of our 13 buildings. What's more, our students living in dormitories had no direct access to the LAN, and they had to arrange their own telephone services working with the independent local exchange carrier."

Limitations also extended to college faculty, unable to communicate electronically with staff and students. They also lacked the means for providing online course materials to students, a service considered mandatory in today's institutes of higher education.

Early in 2000, Menlo College administrators faced the need to completely overhaul the existing campus telephone and data networks in order to keep the college competitive.

Building a solution—one partner at a time

Considering the magnitude of the job at hand, Olson set out to find knowledgeable partners to design, build and configure the network—a team with enough experience to successfully complete the project in three short months.

In spring 2000, he brought in VOICEPRO, a respected communications technology integrator based in San Ramon, California, to design a telephone and voicemail system, and early discussions centered on a new private branch exchange (PBX) system. Impressed with the technical expertise of the college's IT staff, VOICEPRO instead recommended a broader solution designed around AVVID (Architecture for Voice, Video, and Integrated Data), a leading IP technology developed by Cisco Systems. IP telephony could reduce the college's overall maintenance load, bring telephone connection service in-house without adding staff, eliminate all of the limitations of its current data network and support exciting new applications well into the future.

"All the technical journals I had read said that the Cisco AVVID was the only proven, complete IP telephony system available," noted Olson, "and while this implementation would cost us more than a traditional PBX up front, we would lack the scalability and flexibility to add applications later on. PBX would cost us more down the road."

The VOICEPRO team then recommended AMS.NET, a network integration company from Livermore, CA, to design an IP infrastructure capable of supporting both voice and data transmission. "It was clear to me that, in addition to support from VOICEPRO, having AMS.NET as a partner would be a real advantage," said Olson. "From the moment we began discussing topology, I could see we were of like minds. Our ideas about building in redundancies gelled very quickly. The fact that VOICEPRO was a Cisco Premier Partner and that AMS.NET was a Cisco Silver Partner, and that they both had experience designing and building these networks, made us even more confident that this was the winning team."

AMS.NET designed and installed the Gigabit Ethernet backbone, managed the work of subcontractors that laid fiber-optic cable between buildings and upgraded in-building wiring. VOICEPRO designed and installed the telephone portion of the converged network, including an Octel 300 voice mail system and 550 IP telephones.

While most of the project progressed without any hitches, the team did encounter some unexpected challenges. For example, with classes in session, they were not able to dig trenches across the campus for the necessary rewiring. With the help of subcontractors under the management of AMS.NET, the fiber was laid through pipes using a "mole" process to minimize disruption. "We had to rewire the whole campus," said Robert Tocci, AMS.NET president. "We had to have complete cooperation and tight communications between our staff, the college staff and the subcontractors to have a prayer of pulling things together on time."

As a Cisco Silver Partner, AMS.NET is required to have two Cisco Certified Internetwork Experts (CCIEs) on staff. "We were responsible for designing and building the data network, and for choreographing the work of several subcontractors," Tocci explained. "Our resident CCIEs were able to handle most of what was needed, and they were able to go to a dedicated engineer from Cisco for software fixes when necessary."

The New Network—Delivered as Ordered

In exactly three months, the new network was installed, configured and tested, and in August, as students registered for the fall semester, they received their IP telephones along with registration materials.

Menlo college dormitories now have one switched 100-Mb Ethernet "port per pillow," so each student can connect an IP phone to the wall jack and a PC to the IP phone. What's more, moves and changes are easily achieved with the IP network solution. Menlo College estimates that it handles about 300 student moves a year, at an average cost of $150, so annual net savings for this improvement alone could reach $45,000.

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In addition to e-mail capabilities, faculty and staff now use the college intranet to place facilities work orders, post and examine course information, and submit expense reports directly to Accounts Payable. Other manual flows, such as purchase orders, will be automated soon. Olson expects that the next step will be to exploit the integrated Web interface on the Cisco IP Phone, so students can take advantage of services such as Web-based registration without using a PC.

"The students took to the data access and the new telephone system immediately," said Olson. "The faculty and staff were pleased to have no server interruptions and no problems with e-mail, but they needed some training on the phone system." In early August, VOICEPRO provided a live voicemail training session for IT and administration, and faculty reviewed a videotaped transcript of the session when they arrived later in the month.

One for the Books

Olson and his internal IT staff consider the project the ultimate teamwork scenario. All of the partners agree that a project of this complexity would normally require six months to complete successfully. "We cut the schedule in half and were still able to provide what we promised going in," Olson concluded. "The bottom line is, if you're working in Internet time, you have to have knowledgeable partners."

AMS.NET
502 Commerce Way
Livermore, CA 94550
(800) 893-3660
http://www.ams.net

VOICEPRO
400 Executive Parkway
San Ramon, CA 94583
(925) 866-8866
http://www.voicepro.com

Menlo College
1000 El Camino Real
Atherton, CA 94027
(800) 556-3656
http://www.menlo.edu

Corporate Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
http://www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

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