



Moraine Valley Community College

Improving Accessibility and Learning Through Cisco IP Communications

Background

Dedicated to “providing accessible, affordable, and diverse learning opportunities and environments,” Moraine Valley Community College (<http://www.morainevalley.edu>) serves more than 16,000 students from 26 Illinois municipalities in the Chicago area.

Founded in 1967, the college offers 101 degrees or certificates, 700 credit courses, and 425 non-credit courses across seven areas of scholarship. Accessibility is a crucial requirement for a college where 85 percent of its students work while attending school, one-third study at night, and 61 percent study part-time.

Moreover, accessibility is a legal obligation when it comes to meeting the needs of disabled students, employees and faculty. U.S. federal statutes such as the Rehabilitation Act of 1973 and the Americans With Disabilities Act mandate that institutions such as Moraine Valley Community College provide equal access to programs and services to the disabled. “The college is committed to the spirit and the letter of these laws,” its Center for Disabilities Services (CDS) affirms in its mission statement. “We acknowledge the responsibility of all staff, faculty, and students to adhere to the philosophy of equal access to opportunity.”

Along with accessibility, innovation is a hallmark of Moraine Valley Community College. The college has earned a national reputation for excellence in community-based higher education. In fact, the League for Innovation in the Community College selected Moraine Valley as one of 12 “Vanguard Learning Colleges” in the United States. Seventy percent of Moraine Valley’s courses are technology-related or -enabled. In addition, the college serves as a Regional Cisco® Networking Academy, allowing its students to become certified experts in Cisco technology.

In 2001, the college completed a major network infrastructure upgrade to support enhanced e-learning “smart classroom” and video-on-demand capabilities. The college merged two networks (an Ethernet local area network [LAN] and a Token Ring LAN) into one campus-wide system based on IP (Internet Protocol), with a one-gigabyte backbone, and 100-megabyte connections to the desktop. Redundancy and failover capabilities and the Cisco Secure PIX® Firewall Series provided the new network with high availability, reliability, and security. The Cisco Application and Content Networking System (ACNS) solution and Cisco IP/TV® video streaming applications were then deployed across the new network giving Moraine Valley faculty and staff access to multicast and on-demand video.



Challenges

During the network upgrade, the college faced a further communications challenge—replacing an aging, obsolete TDM (time division multiplexing) telephone system for its 294-acre, Palos Hills campus. Based on PBX and voice mail technology that dated from the mid-1980s, “the system was not upgradeable and couldn’t be expanded,” notes Jack Leifel, the Chief Information Officer of Moraine Valley Community College. “The old system was limited in performance and its voice mail system had reached capacity, limiting usage to seven messages per mailbox—it was easily overwhelmed. Finally, the old E911 server was erratic and unreliable.

At the same time, that college’s IT staff moved to enhance the accessibility of its telecommunications services to the disabled, to assist deaf, hearing and speech impaired students who need to communicate with college departments by phone. Under the old system, Moraine Valley only had two inbound teletypewriter (TTY) lines that enabled deaf students to communicate with two departments via text messaging: one line connected to the college’s Center for Disability Services, the other to the registrar’s office. Due to the limitations of their current system, Moraine Valley wanted to expand TTY access to departments across campus.

Bill Helmold, now the college’s Manager of Information Technology (IT) Projects and Telecommunications, came to Moraine Valley in 1994; He took over the duties of Telecommunication Services in 1999, it was now his job to address these needs. “We simply could not do E9-1-1,” he recalls. “The old system gave you no idea where an emergency call might be coming from. We also needed to save money on the back end, where we had old T1’s and old switches. Trunk lines were expensive and T1 lines were very inefficient and provided poor load balancing and call-routing capabilities. We also required greater functionality on the back-end: features such as caller ID, conference calling, and one-button functionality.”

“I had been following developments in the telecom industry and I knew that buying another TDM switch would be a mistake,” Helmold says. “I was interested in moving to an all-IP environment for voice and data back in 1999. When we replaced the Ethernet and Token Ring LANs with the new IP network in 2001, we had the infrastructure in place to support IP Telephony as an application over the network. Meanwhile, Cisco and other companies were making strides in developing IP Telephony solutions. Because of this, during the winter of 2001–02, we issued a new RFP that would replace our TDM phones with an IP-based system.”

Solution

The college carefully reviewed proposed solutions. “We looked at them all,” Helmold says. Ultimately, the college selected a proposal teaming Cisco Systems with Logical Network Services, a Cisco Gold Reseller.

The college selected Cisco IP Communications and Logical Network Services because the joint proposal satisfied key criteria, including superior functionality—such as better communications services and E9-1-1 capability—as demonstrated by an installed pilot system; cost-effective pricing; and extensive customer references demonstrating Cisco solutions.

“We did extensive research,” says Leifel. “We visited Cisco customers in the Chicago area, and spoke to a major metropolitan region in the Southwest that uses Cisco equipment. We became completely satisfied that TTY devices would function completely on the new system and that Cisco’s IP Communication system was accessible.

Moraine Valley’s suite of solutions includes Cisco CallManager for call processing and 650 Cisco IP Phones (models 7940, 7960 and 7935); Cisco Voice Gateways for interoperability with analog devices and legacy systems; Cisco Unity™ Unified Messaging; Cisco Emergency Responder for E9-1-1 and advanced emergency features, which fully supports the use of TTY devices in making emergency calls; and Cisco IP Contact Center (IPCC) Express for customer contact functions.



In addition, the college deployed TextNet TTY from HITEC Group International (located in Burr Ridge, Illinois) to extend TTY access across the college. TextNet turns desktop PCs into TTY devices, enabling the college to give TTY and text callers equal access to the benefits and capabilities of a voice-based system.

Cisco IP Communications solutions support access for people with disabilities. In addition to working with analog devices such as TTY modems and fax machines æ both crucial devices for the hearing impaired æ software-based Cisco solutions have the flexibility to support people with other disabilities: they can, for example, modify user interfaces for Cisco IP Phones and Cisco IP SoftPhone software to make them easier to use for people with vision and motor disabilities.

Cisco IP Communications solutions are in wide use in government agencies that must follow the most stringent disability access guidelines. In addition, Cisco is committed to innovation in accessibility in the development of IP Communications solutions. The open, standards-based Cisco AVVID (Architecture for Voice, Video and Integrated Data) architecture provides a robust development environment for the creation of assistive technologies from third parties.

Results

Helmold and Leifel carefully planned and monitored an aggressive project schedule. Design and deployment for the project was scheduled to take two months, ending with a cut-over during the college's 2003 spring break. This phase of the project went smoothly and was completed on time, Leifel says.

Training was a key component to the plan; according to Leifel, 75 percent of the faculty was trained before the system went live. The Cisco IP Phones were on desktops for internal dialing two weeks before the cut-over deadline. "This created great excitement among our users about the new features," Helmold says. "They began to realize some of the things we could get out of the new system."

"Cisco and Logical were absolutely outstanding people to work with," Leifel adds. "They were side by side with us on every issue. We did this in a very short time window, and our team put in a lot of hours. They did a tremendous job, did whatever it took to get the job done, and have received very high marks across the campus. "

"Our user feedback has been phenomenal," Helmold says. "Users are enjoying gains in productivity and better communications capability through the system's new features and functions, such as caller ID, unified messaging (providing voice, fax and e-mail in a single inbox with access from their PC or any telephone), missed calls, received calls, placed calls, the corporate directory, conferencing, redial, time and date on the display, and the ability to quickly adjust the volume and ring tone of the phones."

In addition to new functionality, the new Cisco IP Communications system promises to simplify network administration by providing an integrated voice-and-data environment. This new system's Enhanced 911 capability satisfies current needs and enables the college to react to potential changes in E9-1-1 legislation without undue and additional expense. Using the Cisco platform's XML (eXtensible Markup Language) environment, Logical Network Services developed a software link between the student database and the phone's caller ID display to push student data to the phones for swifter identification of the student on the phone, thus enhancing responses to student questions and needs.

"We went over and above the call of compliance and dramatically improved access with this system," Leifel says. "TTY callers can now connect to 17 departments, including the Center for Disability Services, IT, campus police, registration, E9-1-1, and telephone services. It's easily expandable, and the incremental costs of this solution when compared with the expense of TTY phones are an order of magnitude apart."

The system provides greater access for the disabled. Debbie Sievers, Director of the Center for Disability Services, says that the CDS has tested the capabilities of the new phone system and is very pleased with it. The HITEC system provides more flexibility for routing calls from the TTY line, and the PC interface provides better communications for the speech-impaired. "We're much better positioned to serve the needs of the disabled with the new phone system," she says.

"In the short term, we now have plenty of capacity to handle TTY traffic with the TextNet solution," Leifel adds. "In the long term, we're very confident in the system's expansion capability for TTY and other types of assistive services. The Cisco IP Communications platform and XML-based development environment let us incrementally add capabilities and applications easily. We can add computing and storage resources, and a very large number of lines. Through XML, we can create applications running on this system that will give us capabilities we had never dreamed of before."

Moraine Valley Community College has used the Cisco Application and Content Networking System and Cisco IP/TV video streaming applications in a number of different ways. Its communications classes

have used IP/TV in the classroom for a "comparison and contrast" exercise using local news broadcasts. The college used the system to broadcast, live, its graduation ceremony held in the gymnasium to an overflow audience located in its main theater. This provided a cost savings of over \$10,000 if standard cable broadcast staging was used. And it has used the solution to disseminate videos of special events, training materials, and the college's advertising program to its employees. The Cisco ACNS and IP/TV solutions have provided significant benefits to students, Helmold says. "They have effectively engaged our students, ensured that timely and up-to-date materials have been used in the classrooms, and increased interest in those materials," he notes.

A superior communications environment was the college's compelling objective in moving to the new IP-based system. But Moraine Valley also expects that it will save money from the removal of existing basic telephone service lines and from reduced cabling costs now that only one cable, instead of two, can connect users to the network. "We definitely get 'more bang for our buck' with Cisco IP Telephony," Helmold says. "But what makes a difference for us is that we're getting so much more functionality over and above what we had."



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