



Customer Case Study

Wireless Network Helps Community College Stay Competitive

Cisco Unified Wireless Network enables Irvine Valley College to attract students with wireless communication and educational innovations.

EXECUTIVE SUMMARY

IRVINE VALLEY COLLEGE

- Education
- Irvine, California, United States
- 13,000 students, 525 faculty and staff

BUSINESS CHALLENGE

- Maintain college's reputation for progressive technology adoption
- Upgrade network to support streaming video and distance learning
- Improve student, faculty, and staff productivity with voice and data networking

NETWORK SOLUTION

- Update existing Cisco infrastructure with IP voice and data network
- Place more than 70 wireless access points across campus
- Automate enforcement of security compliance for connecting devices

BUSINESS RESULTS

- Increased IT staff productivity through centralized network management and mobile communication
- Increased convenience for students and creative educational opportunities for faculty
- Added value to existing IP-based applications

BUSINESS CHALLENGE

Education is a competitive business for the community colleges in academically oriented Orange County, California. Many of the students who apply to the nine community colleges in the county's four districts plan to transfer to the University of California, and they have exacting standards for selecting the school that will best prepare them for those coveted spots.

One of the most successful schools in preparing students to make this transition is Irvine Valley College (IVC). According to the California State Chancellor's Office, IVC has one of the highest transfer rates to the University of California among Orange County community colleges. The school, which is accredited by the Western Association of Schools and Colleges, earned this competitive advantage by providing a high-quality, affordable education that emphasizes the overall student experience. An essential part of that experience is technology. "Staying at the forefront of technology is part of our mission statement, which is very progressive for a community college," says Tran Hong, director of technology for IVC.

In 2001, IVC's data network did not support the video required for educational applications such as distance learning and streaming video, and its private branch exchange-based phone system was quickly becoming outdated. "We needed a fast, IP-based infrastructure that could handle our voice and data needs, and a way to manage all that technology with our limited staff," says Hong.

IVC secured the necessary funding and began implementing a unified Cisco Systems® infrastructure for converged voice and data networking. Wireless networking was part of the original plan, but establishing the IP infrastructure took priority. In 2006, the time, budget, and technology were all in place to add the planned wireless network. For that step, IVC needed to select a wireless vendor and find a partner to manage the implementation.

NETWORK SOLUTION

Cisco Systems recommended that IVC meet with Metronome, Inc., a provider of end-to-end converged communications solutions. Based nearby in Irvine, California, Metronome was the winner of the Cisco® Innovation Partner of the Year award in 2004 and 2005. "We have a tremendous amount of trust and faith in Cisco, and respect for their expertise and opinions. We asked them to recommend a couple of integrators for the wireless project, and one of the first names that came up was Metronome," says Hong.

Metronome and IVC looked at solutions from several wireless vendors and selected the Cisco Unified Wireless Network. The driving factor in selecting Cisco was the integration that it could provide between the existing infrastructure and the new wireless technology.

“Cisco definitely offered a compelling wireless solution in its own right. In combination with our existing Cisco network and excellent Cisco support, all the pieces came together, and there was only one choice,” says Hong.

Two recently introduced Cisco wireless networking technologies were particularly important factors in the selection process. Cisco access points that use the lightweight access point protocol offered the college a low-cost, easy-to-manage solution because most of the intelligence needed to control these access points is located in a separate controller for the wireless LAN. As a result, the access points do not require individual configuration and are exceedingly reliable. These access points also offer a Cisco Power over Ethernet feature, which provides power through the Ethernet connection. This feature eliminates the need to run power cables for new access points, reducing both initial installation and growth costs.

The other differentiating technology was the Cisco Network Admission Control (NAC) Appliance. Cisco NAC Appliance determines whether devices such as laptops, IP phones, and game consoles are compliant with network security policies and repairs any vulnerabilities before permitting access to the network. IVC also uses this appliance to create network security policies and provide separate virtual networks for students and faculty to protect sensitive data.

The remainder of the wireless network is composed of Cisco Wireless LAN Controllers, Cisco wireless phones, a Cisco Wireless Location Appliance, and a Cisco Wireless Control System (WCS). The Cisco Wireless Location Appliance works in conjunction with radio tags to track the location of expensive equipment such as data projectors. The Cisco WCS is an optional network component that works in conjunction with the Cisco Wireless Location Appliance, Cisco Aironet Lightweight Access Points, and Cisco Wireless LAN Controllers. With Cisco WCS, network administrators have a single solution for RF prediction, policy provisioning, network optimization, troubleshooting, user tracking, security monitoring, and wireless LAN systems management.

Within three months of IVC selecting the Cisco Unified Wireless Network, the students, staff, and faculty had wireless connectivity to the college network and to the Internet. The solution provides wireless access from classrooms, offices, indoor common areas such as the library and cafeteria, and many outdoor locations.

“Integrating wireless into our IP infrastructure gives us many opportunities for new applications and helps us stay at the forefront of technology.”

—Tran Hong, Director of Technology, Irvine Valley College

BUSINESS RESULTS

Wireless network access helps IVC attract students and provides a new medium for faculty to produce innovative educational materials. In sunny Southern California, the students like to sit outside and do homework, and they sit in common areas with a laptop to reach out to each other with instant messaging. Teachers benefit from the mobility to stay connected to the network from anywhere on the campus, and they also make use of their newfound ability to create a classroom environment in a laboratory, a conference room, or outdoors.

The students at IVC were clearly excited about the new wireless network. “Within the first hour of turning on the system, students were already trying to access the wireless network—and we had not even announced it,” says Hong.

While the students and faculty enjoy the advantages of mobile network access, they also benefit from behind-the-scenes management features that help the IT staff maintain peak network performance and high security. The Cisco WCS, for example, gives Hong complete visibility into the network. He can locate and terminate rogue access points while easily monitoring and managing the more than 70 access points that are currently deployed throughout the campus.

The automated authentication provided by the Cisco NAC Appliance also enhances IT staff productivity. “The NAC Appliance lets us make sure that things are secure without individually authenticating every machine that tries to access the network,” says Hong. “It also gives us the flexibility to protect ourselves from specific viruses and isolate users who we feel are a potential threat.”

The Cisco Wireless Location Appliance will provide further security benefits by letting the IT staff track the location of high-value assets. The Cisco Wireless Location Appliance uses Cisco Wireless LAN Controllers and Cisco lightweight access points to track the physical location of wireless devices to within a few meters. As a trial, the staff recently purchased 25 radio frequency identification (RFID) tags for some of their high-value assets. The staff hopes that tagging and tracking the items will help prevent theft and reduce the cost of replacing stolen equipment. If all works well, this solution will also ease inventory management, as technicians will no longer have to travel from room to room to confirm the location of devices equipped with RFID tags. Additional tags will be purchased and installed at a later date.

Wireless networking will also add value to existing IP-based applications. For example, the school's internal television broadcasts are transmitted through the IVC Website by streaming video with open captioning for hearing-impaired students. Now students can view this live television feed from any campus location with wireless access. "Integrating wireless into our IP infrastructure gives us many opportunities for new applications and helps us stay at the forefront of technology," says Hong.

NEXT STEPS

The IVC IT staff is currently using Cisco wireless phones in a pilot program to help the technicians work more productively as they move around the campus. Hong plans to expand the wireless phone use to campus security as part of a larger security program that will include wireless applications, such as electronic access control for doors, and wireless video surveillance cameras. Hong will also look at adding access points to expand wireless coverage to more outdoor areas, providing even greater network access for students, staff, and faculty.

PRODUCT LIST

Routing and Switching

- Cisco Catalyst® 6513 Switches
- Cisco Catalyst 3750 Series Switches with PoE

Security and VPN

- Cisco PIX® 525 Security Appliance
- Cisco Network Admission Control (NAC) Appliance

Voice and IP Communications

- Cisco Unified Wireless IP Phone 7920

Wireless

- Cisco Wireless Control System (WCS)
- Cisco Aironet® 1130AG Access Points
- Cisco Aironet 1240AG Series access points
- Cisco 4400 Series Wireless LAN Controllers
- Cisco 2700 Series Location Appliance

FOR MORE INFORMATION

To find out more about the Cisco Unified Wireless Network, visit:

<http://www.cisco.com/go/unifiedwireless>



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