

University Woos Students with Wireless

Marquette University installs a Cisco Unified Wireless Network to offer Wi-Fi access in student residence halls.

EXECUTIVE SUMMARY
<p>MARQUETTE UNIVERSITY</p> <ul style="list-style-type: none"> • Higher education • Milwaukee, Wisconsin • 11,000 students <p>BUSINESS CHALLENGE</p> <ul style="list-style-type: none"> • Attract new students by addressing their expectation of ubiquitous wireless network access. • Support the burgeoning number of wireless devices that students bring to campus. • Mitigate security risks from unauthorized access points.
<p>NETWORK SOLUTION</p> <ul style="list-style-type: none"> • A Cisco unified wireless network, which centrally controls hundreds of lightweight access points while providing comprehensive security and management features.
<p>BUSINESS RESULTS</p> <ul style="list-style-type: none"> • Reduced wireless-related help desk calls by 70 percent. • Vastly improved the user experience of signing on to the wireless network, especially during the hectic first week of school. • Eased network management by providing automatic configuration of lightweight access points. • Enabled remote detection of unauthorized access points, mitigating security risks such as virus propagation. • Provided students with ubiquitous wireless network access.

Business Challenge

For many young Americans born after 1985, ubiquitous Wi-Fi access is not just a convenience or a privilege; it is an entitlement. Nobody knows this better than the colleges and universities competing to woo a new freshman class each year, and to retain those students once they matriculate.

“This is an expected service,” says Dan Smith, senior director of technology at Marquette University in Milwaukee. “If you do not have it, it is a negative mark against you.”

Marquette has been offering Wi-Fi access in academic buildings and common areas for more than five years, along with wired Ethernet access for every student in the residence halls. But recently the school realized the need to expand Wi-Fi access to include its residence halls.

“Every year, more and more students have been showing up with wireless devices,” Smith says. In fact a recent university survey indicated that, within the next few years, notebook computers may make up 90 percent of the PCs that students bring to campus.

“University administrators see Wi-Fi access as a selling point,” Smith says.

Adding urgency to the situation was the fact that many students—impatient with the lack of Wi-Fi in residence halls—were sneaking their own wireless access points (APs) into their dorm rooms and connecting them to the university network via the Ethernet ports in their rooms. Although this created network security risks, especially in terms of virus propagation, the unauthorized “rogue” APs went largely ignored for years.

“We had a policy against student APs, but we did not strictly enforce it because we knew that the students did not have an alternative,” Smith says.

In the spring of 2006, the university decided to address the issue and provide wireless access in its 15 residence halls.

Network Solution

In Marquette's existing common-area wireless LAN, each access point required hands-on management. But for the residence hall upgrade, the school's IT team wanted a WLAN that offered centralized management and control. The team knew that it would need some 700 access points to provide ubiquitous wireless access throughout both the residence halls and academic buildings. Central management would avoid a dramatic increase in operational and staffing costs. Cisco® had been Marquette's trusted networking provider for years, and the school chose a Cisco unified wireless network featuring centralized AP management and control.

"We were already running a Cisco network," Smith says. "Cisco offered lightweight access points and centralized management so it made the wireless decision pretty easy for us."

Marquette hired Berbee Information Systems, a popular systems integrator, to install the network. The first phase of the installation involved deploying Cisco Catalyst® 6500 Series Wireless Services Modules (WiSMs). Designed to integrate into networks that utilize Cisco Catalyst 6500 Series Ethernet switches, WiSM controllers provide real-time communication among up to 300 lightweight access points and other controllers.

In the second step of the installation, Berbee and the Marquette IT team replaced the existing access points in the school's academic buildings and common areas with lightweight Cisco Aironet 1240 Series wireless access points, which could be managed by the WiSMs. Finally, the team blanketed 15 residence halls with lightweight access points to provide ubiquitous wireless access to the student residents. The installation was completed in January 2007.

Marquette's unified wireless network installation also included a Cisco Wireless Control System (WCS) to automatically find and configure all the wireless access points via the Lightweight Access Point Protocol (LWAPP). The Cisco WCS automatically associates each new access point with the controller, eliminating manual configuration and saving many hours in maintenance time. The WCS also provides RF prediction, policy provision, network optimization, troubleshooting, security monitoring, and system management—all from a robust graphical interface. In addition, the new system allows automatic configuration of wireless devices that students or faculty members bring to campus.

Business Results

Marquette's unified wireless network implementation did not come a moment too soon, according to the school's IT staff. In the 2005-2006 school year, some 1,500 students brought laptop computers to school. In the 2006-2007 school year so far, about 4,000 students have already configured new laptops and other wireless devices to the WLAN.

With that kind of growth, the staff is grateful for the automation features in the unified Cisco wireless network. "We no longer have to touch student machines in order to get them on our wireless network," Smith says. "It is a huge time saver."

In fact, wireless-related help desk calls have been reduced by 70 percent, even though so many more students are on the WLAN now.

The new system also reduces the problem of students installing rogue access points in the residence halls. In the past, finding these unauthorized access points required a great deal of effort.

“They might have used a handheld tool to try and find them, but it was by no means an efficient process,” says Tom Koppelman, Cisco Enterprise Account Manager, responsible for Marquette. That is why the staff did not bother to track down the rogues in the past; in spite of the security risks, it was too costly and invasive. But providing wireless network access throughout the residence halls reduces the temptation to deploy rogue APs, and the Cisco WCS automatically detects and blocks any unauthorized APs from connecting to the campus network.

Next Steps

In addition to ubiquitous data access, Marquette is considering deploying voice-over-Wi-Fi phones for university staff members who spend a majority of time away from their desks. The IT team is also looking at a unified messaging project, in which student and faculty voicemail messages would be forwarded to their e-mail inboxes.

In the meantime, the school is confident that the new WLAN will keep up with the burgeoning student demand for wireless data access.

PRODUCT LIST

- Cisco Aironet 1240 Series Wireless Access Points
- Cisco Catalyst 6500 Series Wireless Services Module (WiSM)
- Cisco Wireless Control System

For More Information

To find out more about the Cisco Unified Wireless Network, visit: <http://www.cisco.com/go/wireless>

To find out more about Cisco Solutions and Services, visit: <http://www.cisco.com>

To find out more about Cisco Education Solutions, visit: <http://www.cisco.com/go/education>



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