



CASE STUDY

THAYER ACADEMY BUILDS 21ST CENTURY VOICE AND DATA SYSTEM WITH CISCO IP COMMUNICATIONS

EXECUTIVE SUMMARY

CUSTOMER

- Thayer Academy

INDUSTRY

- Education

BUSINESS CHALLENGE

- Extend phone system to all faculty
- Upgrade network to high-speed, switched environment

NETWORK SOLUTION

- Cisco® Catalyst® switches and Cisco PIX® security appliances
- Cisco IP phones
- Cisco CallManager with Cisco Unity™ IP Communications platform

BUSINESS VALUE

- Full-featured phone system accessible to all staff
- High-speed, switched data network
- Substantial cost savings by deploying a converged network instead of separate voice and data solutions

BACKGROUND

Since its founding in 1877, independent day school Thayer Academy in Braintree, Massachusetts has offered a diverse and challenging college preparatory education for middle and high school students. While Thayer promotes this environment with a comprehensive academic community and outstanding faculty, the Academy has long recognized that parents play a vital role in attaining its goals. So Thayer's 140-member faculty actively strives to keep parents of the school's 660 students informed and involved in their children's education.

"One of the expectations parents bring to an independent school is that there will be a lot more communication," says Mark Nelson, director of Information Technology at Thayer Academy. "In that context, the telephone is an incredibly valuable teaching tool."

BUSINESS CHALLENGE

But as Thayer had grown over the years, its phone system had not kept pace. When the switched private branch exchange (PBX) phone system was initially deployed in the 1950s, only supervisory personnel and department heads used telephones. By 2001, every faculty member was responsible for advising as many as 10 students, in addition to serving as parents' primary point of contact with the school. Advisors tried to keep parents closely involved and well informed, but with the antiquated phone system, staying in touch proved anything but easy.



"In some buildings, we had just one or two phone sets for a couple dozen faculty members," says Nelson. "Faculty could not be reached easily, and they had to hunt for a free phone whenever they wanted to make a call. They were wasting a tremendous amount of time and energy just on the mechanics of staying in touch with parents."

The phone system was also very difficult to maintain. Whenever the academy needed to

do a simple add, move, or change, they had to call an outside vendor, who could take several days to perform the operation.

“The solution easily saved us a couple hundred thousand dollars. If we had chosen an ordinary telephone system, we would have spent the same amount of money, but would still have an older data network that needed replacing. Instead, we were able to deploy one robust, reliable network backbone that provides both a high-speed, switched data network and phone service wherever we need it. We really did reap the benefits of convergence.”

—Mark Nelson, Director of Information Technology, Thayer Academy

Thayer’s administration recognized that the time had come to upgrade the phone system. But the existing copper wire infrastructure was severely limited. And although the large, historic campus was a source of pride for students and faculty, it also meant that adding new wiring for a traditional phone system would be very expensive.

At the time, Thayer was also contemplating an upgrade to its data network. Thanks to a donation from a former student, the Academy had deployed a 10 megabits per second (Mbps) Cisco Systems network. Built on a Cisco 7200 Series Router, the network had transformed the Academy, providing students and staff with e-mail, Internet access, and instant communication tools for the first time. But as the school’s applications had become more sophisticated, students had begun working with much larger audio and video media files. Nelson knew that the network would soon need to be upgraded.

Rather than viewing the phone system and data network separately, Nelson saw the potential for a creative and holistic solution. The existing fiber optic data network was already deployed everywhere on campus that the new phone system would need to go. By migrating the network to a fully integrated data and IP telephony system, the Academy could solve both problems at once, and potentially save thousands of dollars in the process.

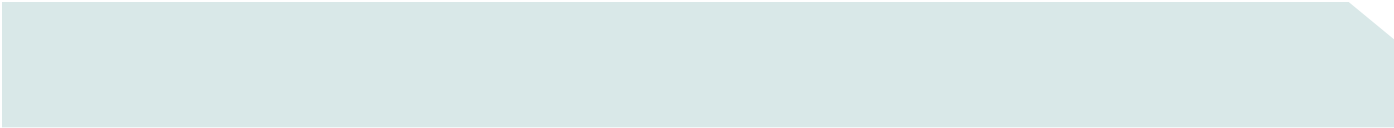
NETWORK SOLUTION

Nelson opted to deploy a solution that would bring the phone system into the 21st century and provide a longer-lasting foundation for the Academy’s computing needs. After reviewing proposals for both IP communications and traditional PBX systems, he elected to move forward with a converged voice and data network from Cisco.

To help design Thayer’s solution, Nelson turned to CBE Technologies of Boston. As a Premier Certified Cisco Partner for IP telephony, CBE offered the voice expertise that Thayer required to design a full-feature IP voice system, and the extensive experience to design and deploy Cisco networking solutions.

“We were getting close to the leading edge of this technology, and normally might not have done it,” says Nelson. “But we knew that Cisco and CBE would stand by us and make this effort a success.”

Thayer had deployed the earlier network with a fiber optic infrastructure that was fully capable of supporting high-speed, voice, video, and data. As a result, the Academy could focus exclusively on upgrading the network core, and leave the cable infrastructure as it was. Thayer replaced its Cisco network router with a Cisco Catalyst 6500 Switch. This intelligent, scalable gigabit network backbone delivers 100 Mbps to the desktop for superior voice, video, and data performance. At the network edge, Thayer uses Cisco Catalyst 3500 Series XL switches and Cisco Catalyst 3550 PWR XL switches to deliver full power and carrier-class voice service to user PCs and 184 Cisco 7960, 7940, and 7910 IP phones across the campus. To support the voice solution, the Academy deployed Cisco CallManager with Cisco Unity voice mail.



Thayer Academy uses a Cisco PIX 500 Series Security Appliance to protect the network against external and internal threats and to provide advanced network management features, such as URL filtering. The state-of-the-art network device also provides a built-in platform for VPN, allowing Thayer's IT staff and CBE technicians to securely access the network remotely, via the Internet.

Building a Mobile IP Call Center

Like most independent schools, Thayer Academy relies on fundraising to cover the difference between its tuition income and its operating expenses. The development committee hosts a phone-a-thon four to six times per year, in which volunteers call Thayer parents and alumni to solicit donations. In the past, the antiquated phone system magnified the difficulty of their task.

For these volunteers, one of the most exciting aspects of the school's new phone system was the ability to set up a temporary call center. Thayer's IT staff outfitted an A/V cart with a Cisco Catalyst 3524 PWR Switch and 24 Cisco 7910 IP phones. When it's time for the fund drive, the IT staff simply rolls the cart into the cafeteria, connects the switch to a data port, and sets up the phones on tables. The Cisco Unity voice-mail system allows volunteers to leave a callback number when they don't reach their classmates on the first try, allowing them to secure donations that might otherwise have been lost.

"The volunteers are absolutely thrilled," says Nelson. "We just roll the Cisco switch into place, hook up the fiber optic leads, and the volunteers take it from there. It's our little portable call center on wheels."

BUSINESS VALUE

Thanks to the intelligent Cisco voice and data solution and CBE's network expertise, Thayer Academy faculty is more actively and effectively involved with parents than ever before. Students and staff are benefiting from a much faster, higher-performance data network that will easily accommodate rich media sharing for years to come. And, the Academy was able to double the number of phones on campus at a fraction of the cost of deploying separate voice and data infrastructures.

"The solution easily saved us a couple hundred thousand dollars," says Nelson. "If we had chosen an ordinary telephone system, we would have spent the same amount, but would still have an older data network that needed replacing. Instead, we were able to deploy one robust, reliable network backbone that provides both a high-speed, switched data network and phone service wherever we need it. We really did reap the benefits of convergence."

Today, every faculty member has a Cisco IP phone and a private extension. Parents can easily reach teachers or leave messages, and faculty can call parents wherever and whenever they choose. Teachers can take their Cisco IP phones with them from office to classroom and simply plug the phone into an open data port for instant access to their own extension, voice mail, and call lists.

Thayer's IT staff is also working to link the Academy's student information databases with the Cisco IP phones, using the phones' native support for XML. Eventually, faculty will be able to access daily attendance lists and update records directly from their Cisco IP phones. The system will provide more accurate records and allow faculty to spend more class time teaching, and less time performing day-to-day administration duties.

Outstanding Management and Support

Today, instead of contracting with outside vendors to perform day-to-day phone maintenance, Thayer Academy's IT department handles everything itself. "It makes us much more responsive and much less reliant on outside companies," says Nelson. "The Cisco solution also maximizes our previous knowledge base regarding networks and network operations."

According to Nelson, Thayer has received excellent support from both Cisco and CBE. The Cisco Technical Assistance Center (TAC) provides high-level services, while CBE manages day-to-day support issues. Using the VPN features of the Cisco PIX Security Appliance, CBE staff can securely access the Thayer Academy network over the Internet and immediately respond to problems without sending a technician to the campus.

"CBE and Cisco TAC set the gold standard for support among all the vendors I deal with," says Nelson.

FUTURE PLANS

Thayer Academy's headmaster and IT staff have big plans for the school's network. In the coming months, Nelson and CBE plan to extend wireless network access to the entire campus. When fully deployed, students and faculty will be able to work more freely in any campus building or outdoor area. Nelson plans to use Cisco Aironet® wireless access points to support the solution.

"As we've discussed the Aironet product line, I've realized that I'm going to be able to take the ease-of-management features I already use in my Cisco network, and just extend them into the wireless space. That's a big reason why I plan to stay with Cisco."

In the coming years, Nelson expects the academy to continue to adopt new technologies, both to enhance services to students and employees, and to demonstrate to parents that Thayer is a state-of-the-art institution.

"To our parents, technology is a big differentiator," he says. "They have very high expectations—not just that technology is there, but how we use it. It's one of the things they look at when comparing us with our competitor schools."

Based on his success with rolling out voice and high-speed data, Nelson is confident that Thayer's Cisco network infrastructure will serve as a robust foundation for new technologies and services far into the future.

"Our network today is a fully switched, state-of-the-art system," he says. "In the three years since its deployment, it has served us very well, and everything we were hoping to achieve, we've been able to do. Moving forward, we know that the possibilities for this system are virtually unlimited."

This customer story is based on information provided by Thayer Academy and describes how that particular organization benefits from the deployment of Cisco products. Many factors may have contributed to the results and benefits described; Cisco does not guarantee comparable results elsewhere.

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