

## COGLIN NETWORK SERVICES

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### Worcester Technical High School



### Worcester Technical High School Features Cisco Technology for Production and Learning Environment

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A new technical high school needs state-of-the-art technology to run the school and provide technical education for high school students who will maintain and administer the system. With nearly 10 years between the original plan and actual deployment, a long-term commitment was required from vendor and partner. Technological advances require ongoing revisions of network design.

Read how Cisco® Premier Certified Partner Coghlin Network Services designed and deployed a state-of-the-art technology center for this innovative high school program.

In 1908, one of the country's first vocational high schools opened its doors in Worcester, Massachusetts to meet the demand for skilled workers trained in specific trades. Today, certain industries continue to create high demand for well-trained and well-educated workers, and the Worcester School District was committed to providing a vocational and technical high school that would provide education and training for the needs of today's businesses. And for more than 20 years, the school's directors wanted to deploy new technology at the school in order to train highly motivated students in the rapidly changing world of technology.

"We wanted to add state-of-the-art technology to our curriculum so we could train the technologists of tomorrow," says Peter Crafts, director of vocational education for Worcester Technical High School. "Having the correct networking and communications technology in place would accomplish three key things: it would run the school, it would provide the tools necessary to teach our students, and the students themselves would provide the support services on the system. To my knowledge, this has not been done before."

Federal funding would finally make the dream a reality, and in 2000, the board learned that the funds for a new high school would be available. The search began for vendor, supplier, and technology teams that would stay with the school district through the years-long funding and construction process, and ultimately deploy technology for the new Worcester Technical High School. The technology, expected to last until 2050 and beyond, would be housed in a 400,000-square-foot center.

Although the mindset of most public schools is to go with the least expensive product and the lowest bid, the advisory board for the new school was very technology savvy. The board was committed to finding the best design and strongest implementation, not just the least expensive.

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The Coghlin Network Services logo, featuring the word "Coghlin" in a large, stylized, red cursive font, with "Network Services" in a smaller, black, sans-serif font below it.



"Cisco has been, and continues to be, a dominant technology player," says Crafts. "We had many local business-people involved in the process because they use technology in the real world every day, and they have a strong interest in the skill set of students graduating from Worcester Technical High School. These business people told us they needed people educated in Cisco technology." For design and implementation, the district chose Coghlin Network Services, a Cisco® Premier Certified Partner and woman-owned business, also located in Worcester.

"We like to work with our customers very early in their technology process and stay with them through the entire project," says Chris Kelly, vice president of Coghlin Network Services. "Some companies are not interested in focusing on a deal so early in a years-long process. But we were very enthusiastic about what the new high school was going to offer the students and the community, and we wanted to be a part of it."

The design of the network was challenging because of the nature of funding for the public school. The board and school district wanted a state-of-the-art network, but the approval of a purchase order for the network was years away.

"The budget would remain constant, so we decided that as a group we would design out the infrastructure from a budget standpoint and revise that design continuously to keep up with new technology," says Kelly. "When we started, we knew that IP would be part of the solution, but not exactly how. We knew the school would have wireless access, but not where the access points would be." Kelly and her design team generated an updated design about every nine months early in the process. In the later years that design updating would accelerate until they generated three designs in the final six months before deployment. Overall, the Coghlin team went through eight complete network design revisions over three years.

"Clearly, it was critical to have a lot of faith in our technology vendor and in the partner that we chose to work with," says Crafts. "It was almost a ten-year span from our first meeting to when we opened the doors of the school, and technology was as different as night and day. We had to rely on Cisco and on the Coghlin team to engineer the right products for the high school and its students. They were with us every step of the way."

The final design resulted in deployment of a state-of-the-art technology facility at Worcester Technical High School. The equipment implemented includes:

- 9 Cisco Catalyst® 6500 chassis
- 18 IDF (integrated distributed forwarding), MDF (main distribution frame) and redundant MDF23 Catalyst 3750 - 48; 10/100/1000 PoE (Power over Ethernet) Switches
- Cisco Unified Communications Manager with Unity voicemail
- 252 Cisco Unified IP Phones 7940G
- Cisco Unified Wireless Network with 75 Cisco Aironet Access Points and 2 Cisco 4400 Series WLAN Controllers
- 2 Cisco 5250 ASA Firewalls

Worcester Technical High School opened its doors in August 2006, and is serving 1400 daytime students and nearly 1000 students in the evening. It operates 24 technical programs with many open to the public such as Cosmetology, Automotive Repair, Graphic Digital Printing, Auto Collision, Early Childhood Center, Conference and Multi Media center and a Public Restaurant.

"This is by no means a typical high school," says Crafts. "We offer evening classes so that the collegiate and working community can take advantage of the training that we provide through our four academies. The technology center operates through the weekend. The need for wireless usage and wireless security is very important to support the thousands of people from the public that access the school monthly," says Crafts.

The high school students who enroll in the technical portion of the school's Business Academy are learning valuable networking skills, and through that education are creating solutions that benefit the students, the school, and the community. The Cisco system handles data and communications for the school, while at the same time being managed and administered by the students and their instructors. The live operation is a production and learning center that is providing the opportunity for real hands-on learning. For instance, some students created a portal much like a college would offer that provides a way for students to stay in touch with teachers.

The skilled students of the program are in high demand in the business community, landing technical jobs that pay far beyond what a high school student would typically earn for a summer or after-school job. Students who are just 15 or 16 years old can program and deploy phones in an IP telephony environment and can administer a Cisco network.

"The students in our technology program can become a Cisco Certified Network Associate," says Crafts. "Our high school is producing a dynamic, skilled workforce, and they are learning on Cisco products. Local businesses are clamoring to hire the talent that comes out of Worcester Technical High School."

The benefits are felt inside the school too. The deployment of Cisco Unified Communications and of the Cisco Unified Wireless Network has teachers and staff communicating more effectively and productively. Users are saving time, the school is saving money, and the capabilities and reliability of the system have raised morale among the staff.