

School District Upgrades Network to Support Education Vision



Farmington Public Schools installs network solutions to increase mobility for students and staff.

Executive Summary

Farmington Public Schools

- **Industry:** K-12 Education
- **Location:** Farmington, Michigan
- **Number of Employees:** 1400 employees and 12,000 students

CHALLENGE

- Implement new technology vision and reverse stringent mobility policy
- Support technology upgrades and advancements with limited funding
- Accommodate higher number of mobile devices accessing wireless network districtwide

SOLUTION

- Update wireless network foundation to support new services
- Integrate wireless network solutions within central management system
- Upgrade level of service to provide consistent connectivity to wireless network

RESULTS

- Enabled school system to adopt Bring Your Own Device policy
- Provided bandwidth for 1200 more devices connecting to network
- Offered cost savings despite lack of state funding for technology

Challenge

In 2007, Michael Johnston sat across from a concerned Farmington Public Schools (FPS) parent in a school district planning meeting. The parent asked district administrators a simple question: “Why won’t you allow my son to bring his laptop to school?” This question was a turning point for Johnston, the director of information technology for FPS, and the district’s vision to enhance functionality and advance learning for the district’s 12,000 students.

That same year, the Farmington Hills, Michigan school district underwent a strategic planning process called “Farmington Forward.” One of the four main goals of the plan addressed technology and improving operations for residents, employees, and students in Farmington Hills. A highly-rated school district, FPS held a pivotal role in the development of the venture. Johnston knew this opportunity was a chance to advocate for better student horizons by reaching new learners.

One of the district’s goals was to integrate digital learning tools into education. Previously, the school district had adopted a technology policy that did not allow portable devices to be incorporated into the curriculum. “We simply had to change this policy to accommodate new types of student learning and provide learners with specialized devices,” says Johnston. To reverse that policy and improve pre K-12 teaching, FPS would have to address the issue at its roots: mobile access.

As Farmington Forward began, FPS faced financial challenges that made it difficult to support enhanced mobile access. During the planning stages, Michigan shifted its model of school district funding, which was amplified by the economic downturn in 2008. In 2009, the demand from FPS parents, staff, and the Farmington community to increase mobile learning access expanded. How could FPS best utilize limited funds to accommodate new types of student learning? The answer was a new type of technology platform.

Solution

Johnston began to evaluate wireless network solutions based on their ability to monitor user activity. FPS needed to identify holes in service and areas in need of upgrades. With the Bring Your Own Device (BYOD) movement growing in K-12 school districts across the nation, FPS saw an opportunity to see how many teachers and students wanted to use their own mobile devices.

The FPS information technology (IT) department had been using Cisco® networking products for at least 12 years. Johnston needed the best technology at the best value, and decided to evaluate Cisco alongside several other vendors offering robust wireless network support. Functionality for reporting and evaluating data was a

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Director of Information Technology

vital component in vendor evaluation, because the BYOD vision was now a critical component of Farmington Forward.

Vendor Engagement

After a swift but detailed review, FPS adopted a comprehensive Cisco 802.11n wireless platform, a cohesive computing network without cables, to meet their needs in mobility. "After review, I knew that Cisco would provide the district with the flexibility that other solutions couldn't offer," says Johnston. In 2009, the IT department started to place the new wireless platform across 21 buildings in the FPS school system.

The IT department installed the Cisco wireless network to be managed from a network operations center, so staff members could monitor network activity and diagnose issues with pinpoint precision. This converged type of data management allowed FPS to efficiently oversee wireless access for its entire user community by consolidating resources.

Bring Your Own Device

Part of FPS' goal was to prepare the school district for a more immersive BYOD environment. Over the next few years, the IT department team anticipated that students would bring up to three mobile devices into the school district at a time. To accommodate wireless connectivity to new users, the IT department used the Cisco wireless network to identify areas in need of increased bandwidth. By identifying clusters of wireless adopters in particular buildings, the IT department relocated underused access points and placed them in buildings with clusters of activity.

In 2011, the IT department performed additional access point deployments to increase the reach of the wireless network. These supplemental boosts to the wireless network and IT infrastructure provided an unparalleled level of service for the FPS community.

"We have a sound trust in Cisco," says Johnston. "They enabled us to expand in transformational ways to help support our students and our teachers."

Results

Enhanced support for mobility has created a borderless network for FPS and allowed different types of learners to engage in next-generation education. By leveraging the wireless network to support innovative teaching and learning practices, FPS has attained an enormous return on investment by realizing Farmington Forward without additional state funding.

With Cisco, FPS has taken a proactive role in wireless network management. The ability to support increased mobile connections has eliminated FPS's problem with

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Product List

ROUTING AND SWITCHING

- Nexus 7000 Series Switches

NETWORK MANAGEMENT

- Cisco Unified Computing System (UCS)

WIRELESS

- Cisco Wireless Local Area Network (LAN)

dispersed wireless networks, which has made network operations more efficient and saved time for network operators.

“The new wireless platform has given us the ability to proactively troubleshoot, make changes, and maximize the wireless network,” says Johnston.

Anytime, anywhere learning has also been a positive outcome for FPS instructors. Traveling to outdoor locations and conducting real-time field work are now a reality for teachers who have demanded hands-on learning experiences.

“Going outside for class is no longer a desire, it’s the immediate environment that you’re working in,” says Johnston. This type of engagement better prepares students for the demands of a global university or professional organization

In addition, creating a BYOD environment has freed-up laptops for students who do not have mobile devices at home. “If 10 percent of our students at one high school bring-in laptops, 140 laptops don’t need to be distributed,” says Johnston. “We are now maximizing the use of the technology we have in quantifiable ways and meeting student needs in new ways.” This type of access has allowed all FPS students to participate in new learning programs, providing positive outcomes regardless of economic constraints.

With the integration of BYOD, the number of mobile devices requiring support from each IT staff member has greatly increased. However, the IT department is not adding new staff to support the rise in user access. “Previously, we needed the IT department to concentrate on servicing our 1000 faculty members,” says Johnston. “With our new wireless network, our staff can assist our faculty and 12,000 students simultaneously with no strain in service, which supports FPS in more meaningful ways.”

“One of the ways you can achieve breakthroughs in teaching is through efficient technology, and every district is going to face technology upgrades as a consequence of curriculum changes and student needs,” says Johnston. “I want classrooms built to support technology integration, thereby inviting more families to move into our community. Cisco’s technology makes that roadmap possible.”

Next Steps

As a final step in completing its BYOD vision, FPS has begun a pilot of Cisco Virtual Desktop Infrastructure, consolidating desktops to run on powerful servers, which support additional end-users, digital programs, and learning devices. This new type of virtualization builds on the school district’s adoption of Cisco Unified Computing

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System™ (UCS™) technology in June 2011. FPS launched this deployment to bolster server performance and prepare for a unified, virtual environment, ultimately displacing a prominent vendor that was unsatisfactory.

Building on its wireless and virtual network enterprise, the IT Department has set an ultimate goal to scale Virtual Desktop Infrastructure usage for its 3500 units and redefine how teachers can leverage technology in the classroom. With the introduction of the Virtual Desktop Infrastructure, FPS will provide an on- and off-site ability to access a classroom desktop from their mobile device.

“When we deployed a new wireless network with Cisco, the installation gave us the foundation to move into a virtual desktop world,” says Johnston. “We look forward to more successes with Cisco in implementing our 21st century learning environment.”

For More Information

To find out more about Cisco Wireless Local Area Network, go to:
<http://www.cisco.com/go/wireless>.

To find out more about Cisco Nexus 7000 Series Switches, go to:
<http://www.cisco.com/go/nexus>.

To find out more about Cisco Virtual Desktop Infrastructure, go to:
<http://www.cisco.com/go/VDI>.

To find out more about the Cisco Unified Computing system, go to:
<http://www.cisco.com/go/UCS>.

