

Texas Schools Build Engagement and Cut Costs with Technology

Growing district near Austin deploys efficient network and communications solutions to embrace BYOD and foster learning.

EXECUTIVE SUMMARY

Customer Name: Pflugerville Independent School District

Industry: Education

Location: Pflugerville, Texas

Number of Users: More than 25,000 students and staff

BUSINESS CHALLENGE

- Support rapidly growing schools with flexible, efficient, and cost-effective technology infrastructure
- Enhance communications and academic engagement in BYOD environment with state-of-the-art collaboration tools

NETWORK SOLUTION

- End-to-end Cisco switching network refresh across all schools, including IP telephony

BUSINESS RESULTS

- Achieved more than US\$75,000 in annual cost savings
- Created easy-to-manage environment that can scale to meet increasing population and higher-bandwidth demands
- Fostered collaborative communications and enthusiasm for learning among students and teachers

Business Challenge

From its headquarters less than 20 miles northeast of Austin, Texas, the Pflugerville Independent School District (PISD) serves communities undergoing rapid expansion due to the region's strong economy. Enrollment from 1996 to 2012 more than doubled to over 21,000 students in 27 schools, with another doubling expected within the next ten years.

A 2007 bond package has helped PISD keep pace by providing funding for the planning and construction of new schools, renovation of existing facilities, including updates to campus security systems, and a refresh of technology infrastructure and instructional tools. The bond also funded the establishment of Model Technology Classrooms with interactive whiteboards, tablets for teachers, and wireless student response devices. The program was designed to promote staff training and foster student achievement through problem solving, critical thinking, and collaboration while integrating technology across the curriculum.

PISD had never undertaken a districtwide network upgrade, because the previous infrastructure had been built out over the years in spurts timed to the construction of each new school. "Our

old and refurbished Cisco switches of mixed ages worked well together, but the overall network lacked the more advanced capabilities for voice and video communications to support the district's vision for a 21st century learning environment," says Victor Valdez, executive director of technology for PISD.

The movement toward Bring Your Own Device (BYOD) amplified the need for a more intelligent and robust IT infrastructure. Students and staff wanted to bring their own Apple iPads, tablets, and other devices to campus, and the school board wanted to support this movement; however, the existing architecture could not support the growing demand.

An antiquated private branch exchange (PBX) phone system was expensive and offered more limited functionality even as it demanded higher administration resources. Students and staff wanted access to better technologies to enrich the curriculum and promote collaboration. At the same time, the IT organization had the mandate to pursue operational efficiencies focusing on technological solutions. All these demands (from the newly earmarked security camera system to video learning resources, an enhanced phone system, better wired and wireless access to the Internet, and a myriad of operational improvements enabled by technology) compelled PISD to formulate a complete overhaul of its network.

Network Solution

PISD's network refresh called for replacing over 325 switches across its schools and offices. Cisco Catalyst® 6500 Series Switches at the network core are augmented at the distribution and access layers by Catalyst 3750-X Series Switches. The Cisco® Catalyst 3750-X Series Switches, in particular, were selected for their stacking capabilities, advanced Layer 2 and Layer 3 security features, and ability with Power over Ethernet Plus (PoE+) to power IP phones, wireless access points, and IP video security cameras.

Cisco StackWise Plus technology, a key feature on the Cisco Catalyst 3750-X Series Switches, allows a stack of switches to behave as a single, highly resilient switching unit, with enhanced throughput up to 64 Gbps. The system is simple to manage via a master switch elected from one of the member switches. PISD network administrators can make additions, deletions, or redeployments as needed without service interruption, allowing the infrastructure to scale easily in support of the district's growing needs.

“Instead of looking at the BYOD trend as a challenge, PISD wanted to approach it as Cisco allows us to do: as an opportunity to boost academic engagement and achievement.”

— Victor Valdez, Executive Director of Technology for Pflugerville Independent School District

PISD was also drawn to the Cisco StackPower technology embedded in the Cisco Catalyst 3750-X Series Switches, which aggregates a pool of power across all the switches in a stack to allow a reduction in the number of power supplies required per switch. With this, PISD has been able to consolidate its Uninterruptible Power Supply (UPS) devices, trimming the amount of equipment that IT has to manage.

The PoE+ capabilities of the Catalyst 3750-X Series Switches reduce the need for PISD to purchase additional power supplies and wire electric outlets for IP phones, IP video security cameras, wireless access points, or any IEEE 802.3af-compliant end device, simplifying deployment. Together with StackPower, PISD can sustain a high level of power availability to these endpoint devices while minimizing power supplies and UPS devices.

PISD's LAN upgrade set the stage for a Cisco Unified Communications solution to replace the district's old PBX phone system, including 2600 IP phones across every classroom and administrative office. Angele Fitzhenry, director of technical services, explained the great excitement around these features. “Whereas in the past, teachers had to have a separate, unpublished phone number to limit ringing phones in classrooms to only the highest-priority calls, the new, smarter system offers call-routing options by time of day and by type of caller, as well as applications for unified retrieval of voicemail and email messages. This promotes better communications among staff, teachers, and parents,” she says.

Adoption of a Cisco Prime for Enterprise strategy allows PISD's IT department to efficiently manage its Cisco network and end devices, from switches to wireless access points to IP phones, with unified tools designed to streamline security policy management, troubleshooting, and routine administration tasks.

"Other vendors approached us, but at the end of the day, after we put them side by side, we're just much more comfortable with Cisco because of the years of reliability and experience we've had with the company," says Valdez.

Business Results

With its new technology infrastructure, PISD is well positioned to support more dynamic communications, collaboration, and learning opportunities for its current campus population, with flexibility to scale as the communities that it serves continue to grow. The new environment is tremendously advanced yet cost effective.

The Cisco solution lowers PISD's total cost of ownership in a number of ways. Terminating its PBX maintenance contract allowed the district to gain back US\$50,000 annually. Says Valdez, "That's about the salary of a teacher. So every penny we can gain there is really important."

PISD estimates savings of \$25,000 a year with ceasing maintenance on its old networking equipment. "Cisco's limited lifetime warranty on new equipment plus our Cisco SMARTnet Service provide significant value, and together these increase our ROI," says Valdez.

Cisco StackPower and PoE+ features reduce the district's requirements for power supplies, electrical outlets, and electrical wiring (both in wiring closets and across its campuses near each IP phone, wireless access point, and IP video camera) for additional savings. Moreover, fewer UPS devices and a reduction in the amount of heat generated by wiring closet equipment translate into a lower spend on cooling.

With parents evermore involved in their children's academic success, communications between the schools and families becomes easier with the Cisco Unified Communications solution. Now PISD staff can review email and voicemail from parents, teachers, and staff all in one place, elevating responsiveness and productivity.

From a technology operations perspective, now IT administrators can spend less time managing user accounts and working off of Human Resources employee directory spreadsheets. PISD can boost IT efficiency with consolidated management tools such as Cisco Prime Network Control System (NCS). This capability streamlines administration of the new infrastructure, even as it expands with more new schools and a proposed deployment of additional wireless access points as part of a 2013 bond package to better support the movement toward BYOD.

"Students and staff should be able to come to school, explore online, and collaborate. IT systems shouldn't be a barrier to instruction and learning," says Valdez. "Instead of looking at the BYOD trend as a challenge, PISD wanted to approach it as Cisco allows us to do: as an opportunity to boost academic engagement and achievement."

For example, students in classrooms with wireless access, interactive white boards, and handheld student response systems have been found to be more engaged in lessons. Teachers in those classrooms have identified a major benefit in being able to quickly gauge student comprehension.

PRODUCT LIST

Routing and Switching

- Cisco Catalyst 6500
- Cisco 3750-X Series Switches with PoE+

Security

- Cisco ASA 5500 Adaptive Security Appliances

Services

- Cisco SMARTnet® Service

Voice and IP Communications

- Cisco CallManager
- Cisco Unity® Connection
- Cisco Unified Workspace Licensing

Wireless

- Cisco Aironet® 3500 Series Access Points
- Cisco Aironet 3600 Series Access Points

The district has opened up social media and video services, which have proven quite popular on campus. “We’re seeing big spikes in demand and now we have a future-proofed infrastructure that’s up to par,” Fitzhenry says.

“Promoting an enthusiasm for continual learning is fundamental to PISD’s vision. When technology like Cisco’s can help foster communications, creative ideas, and enduring lessons, that’s extremely exciting,” says Valdez.

For More Information

To find out more about Cisco Catalyst Series Switches, go to:

http://www.cisco.com/en/US/products/ps10745/prod_case_studies_list.html.



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