

## Texas School District Uses Wireless for Online Learning

Boerne Independent School District installs wireless network and Unified Communications solution to increase student achievement.

EXECUTIVE SUMMARY
<p><b>BOERNE INDEPENDENT SCHOOL DISTRICT</b></p> <ul style="list-style-type: none"> <li>• Education, K-12</li> <li>• Boerne, Texas USA</li> <li>• 948 faculty, staff and administrators; 6,350 students</li> </ul>
<p><b>BUSINESS CHALLENGE</b></p> <ul style="list-style-type: none"> <li>• Increase IT department productivity and mobility for teachers, students, and administrators</li> <li>• Improve ease of network use</li> </ul>
<p><b>NETWORK SOLUTION</b></p> <ul style="list-style-type: none"> <li>• Update network foundation to support new services</li> <li>• Create easily managed network that dynamically allocates bandwidth and access points when needed</li> <li>• Integrate unified communications and wireless network for increased functionality</li> </ul>
<p><b>BUSINESS RESULTS</b></p> <ul style="list-style-type: none"> <li>• Increased productivity of administrators, IT staff, and teachers</li> <li>• Improved network scalability and ease of management</li> </ul>

### Business Challenge

Boerne Independent School District is located in Boerne, Texas and consists of a total of ten schools; five elementary schools, two middle schools, two high schools, and one alternative school. The school district employs approximately 948 staff, including teachers and administrators, and serves 6350 students. Boerne’s efforts to provide online education programs were stymied by its aging network infrastructure and minimal bandwidth. To better serve students moving forward, a decision was made to update the existing network, so teachers and students would have access to 21st century learning and collaboration tools.

In 2006, Boerne ISD began construction of a new high school and elementary school, while renovating its existing district high school and middle school at the same time to address enrollment growth. The school district solidified a technology budget to

update the aging infrastructure in place and build wireless networks for the new schools. However, once one school received the new technology solutions, all the schools wanted access. And, Boerne ISD would not allow one group of students to receive the latest education programs, while denying them to others.

Boerne needed a bigger budget to expand its upgrades, but did not have the funds to do so. In addition, Boerne wanted to increase the ease of managing the network, because the school district was forced to compensate for recent IT department layoffs resulting from the current economic environment.

Before the network upgrade, teachers did not have the means to utilize video applications in the classroom, and students had limited access to computers at school. Students were not able to use wireless handheld devices or laptops in most areas of the school, because the wireless network was virtually nonexistent. Additionally, if administrators were forced to leave their desks, they were no longer accessible.

The end goal set by Boerne officials was for students, teachers, and administrators to be able to access the network 365 days a year, 24 hours a day, no matter where they are, without compromising the integrity of the network. “There are expectations for our kids to have access to all the resources and state-of-the-art technologies they need, as well as the appropriate bandwidth to support these applications,” says Steve Stewart, IT director for Boerne ISD.

### Network Solution

The IT department at Boerne ISD always hoped to deploy a complete unified communications solution throughout their schools. However, the schools did not have the network backbone to support such solutions. To accomplish this feat, Boerne officials had to increase their budget to include additional applications and upgrades. This upgrading process began in 2001, with the installment of 50 Cisco® handsets. Then, in 2004, Boerne ISD received a bond so they were able to commit more funding to the migration plan, which enabled them to deploy Cisco Unified Communications in the new elementary school and high school. This installation acted as proof of product to the school board, and this small deployment demonstrated all that unified communications had to offer, including call management and unity voicemail.

The local Cisco team worked closely with Boerne for months on determining its five-year plan to open the network to everyone at anytime with almost unlimited bandwidth. Cisco built an end-to-end solution to satisfy Boerne’s current needs and prepare the district for future applications. In addition, Boerne worked with Cisco to upgrade the 6509 Chassis, 4507 Chassis, and 3560 G-POE core switches and core network backbone.

“Cisco provided the quality, support, and engineers, and was out here at the drop of a hat if we required assistance,” says Stewart. “We needed a company that could respond quickly to our requests, so we went with Cisco.”

The construction of a new wireless network and the numerous upgrades to the network backbones were all done with the purpose of making the network easier to manage. The new network helped the Boerne IT department handle their increased responsibility with decreased staff. “We could not have run the network with the decreased staff if we had not deployed Cisco’s solution,” says Brian Stegall, network administrator for Boerne ISD. “You do not have to worry about managing staff, because the network is so user friendly, which frees up a lot of our time and resources.”

Mobility was critical for Boerne. As such, Cisco built an end-to-end wireless solution to help ensure complete mobility inside and outside the school walls. Today, administrators can roam the schools freely with their Cisco phones and PDAs, while remaining completely accessible. By improving the network backbone, Boerne teachers are now able to utilize online education and video applications in the classroom, providing students with the highest level of technology they have come to expect.

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“We are able to say yes to things, because we had the foresight to build the backbone infrastructure in 2006,” says Stewart. “Administrators want to walk around the campus and use their laptops. Therefore, a lot of access points were required. All of this is possible thanks to the network upgrade. Cisco was able to build in the scalability we needed.”

Boerne also lacked computer labs to satisfy the needs of its students and teachers. The IT department developed a series of laptop carts with built-in Cisco access points. As the carts are moved throughout the campus, they act as moving computer labs. The access points on the laptop carts and in the classrooms are easy to manage and use, allowing teachers the ability to quickly access many of the online education programs without wasting time on determining how to use the cart.

“We are now able to facilitate so many solutions to meet the primary mission of the school district, to educate the students of our district,” says Stewart.

## Business Results

The Boerne administrative team and staff can utilize the wireless network regardless of their location. In addition, students and teachers have more access to computers through the wireless carts, even if they do not have one of their own. And, the administrators, IT staff, and teachers are developing creative ways to take advantage of the new technology.

PRODUCT LIST
<p><b>Routing and Switching</b></p> <ul style="list-style-type: none"> <li>• Cisco Catalyst® 6509 Series Switches</li> <li>• Cisco Catalyst 4500 Series Switches</li> <li>• Cisco Catalyst 3560G/3750G Series Switches</li> <li>• Cisco Cisco 2811 Integrated Services Router with Survivable Remote Site Telephony (SRST)</li> </ul> <p><b>Network Management</b></p> <ul style="list-style-type: none"> <li>• Solar Winds</li> </ul> <p><b>Security</b></p> <ul style="list-style-type: none"> <li>• Cisco Adaptive Security Appliance (ASA)</li> </ul> <p><b>Voice and IP Communications</b></p> <ul style="list-style-type: none"> <li>• Cisco Unified Communications Manager</li> <li>• Cisco Unity® Voicemail System</li> <li>• Cisco 7900 Series IP telephones</li> <li>• IPcelerate</li> </ul> <p><b>Wireless</b></p> <ul style="list-style-type: none"> <li>• Cisco Wireless Integrated Service Module</li> <li>• Cisco 1131/1142 Lightweight Wireless Access Points</li> </ul>

An example of the administrators and faculty’s creativity is the mobile tardy station. District officials realized the need for configuring a mobile tardy station at Boerne High School in order to more efficiently track students. Now students who are late are accounted for via mobile technology. There are two strategic locations on the campus for the mobile tardy stations, where staff can access student information in real time, including how many times a specific student has received a tardy.

The Academy is an alternative campus for students who need credits or have behavioral problems. It provides alternative ways for students to learn and earn necessary credits. Classrooms are in portable buildings with no central intercom system to let teachers know when classes are over. Using Cisco’s Unified Communications solutions, the Academy can

leverage a third-party application called IPcelerate that develops solutions for Cisco unified communications, to enable ring tones to notify teachers when classes are over.

The new campuses, Cibolo Creek Elementary School and Samuel V. Champion High School, which use Cisco Unified Communications Manager, are also utilizing IPcelerate to call into the classrooms hands-free. This application has been helpful when teachers are in the middle of a lesson and receive a call from the front desk or the nurse’s office. Now, with IPcelerate, teachers do not have to stop what they are doing to pick up the phone; the call be answered hands free.

Through IPcelerate, teachers and administrators are able to call a speaker phone/ intercom without using the “special phone” that allows you to call each classroom. Teachers have specifically requested the IPcelerate intercom feature, so now every Cisco phone has licensing for IPcelerate.

“Cisco did a great job of making sure all the pieces integrate nicely,” says Stewart. “Now when someone comes to us with an idea, we can find a solution utilizing technology in which we are already invested.”

### Next Steps

“We would like to do a community networking grant,” says Stewart. “This effort would target pockets in town where economically disadvantaged housing is located, install wireless across the neighborhood, and outfit kids with laptops. Sending English as a Second Language (ESL) kids home with laptops, or providing them with podcasts in English, will help to teach them English from home. Access to this type of network could even help teach their parents to speak English.”

### For More Information

To find out more about the Cisco routing and swithing, go to: <http://www.cisco.com/go/core>.

To find out more about the Cisco wireless, go to: <http://www.cisco.com/go/wireless>.

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



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