

School District Unifies Sites, Improves Education



Jackson County School District works with Cisco partner ITS to deploy a network to expand opportunities for its K-12 students.

Business Challenge

Alabama's Jackson County School District, located in a large, geographically diverse area, serves 6000 students in eighteen schools with a staff of 810. Since distances of up to 80 miles separate some schools and administrative offices, network administration and troubleshooting were expensive and time-consuming. Most importantly, the district wanted to do a better job providing its students with the benefits of new technology, such as distance learning programs.

Dr. Angela Guess, supervisor of instruction for Jackson County Schools, wanted to take advantage of the federal government's E-Rate program to improve technology for the school district. The program provides discounts to assist most schools in the United States in obtaining affordable telecommunications and Internet access. With that initial round of E-Rate discounts, Dr. Guess contracted with a company to install fiber and a new LAN. That company subcontracted some of the project to Cisco® Premier Certified Partner Information Transport Solutions, Inc. (ITS).

"We were so impressed with the passion and total commitment of Dr. Guess and the staff at Jackson County Schools," says Tomi Selby, CEO of ITS. "We really wanted to see the school district develop a long-range, strategic plan so that they would not spend money haphazardly on random projects. A solid plan would help ensure they have a strong technology foundation that they could build on as needs arose and money became available."

Tomi Selby founded ITS after tenure with the U.S. Department of Defense, where she pioneered several key networking technology initiatives for Desert Storm. With her passion for technology and customer service, she started ITS in 1993 and incorporated it five years later. Today, ITS has 80+ employees and annual revenues of more than US\$30 million, and Selby credits the company's success to its commitment to customer satisfaction and great employees.

Network Solution

After developing a five-year technology plan, Dr. Guess was more enthusiastic than ever about how technology could help the school district run more efficiently and help students be more competitive.

"We knew what we wanted our students to be able to do and what we wanted to be able to offer them," she says. "ITS helped us identify the technology that we needed to put into place to be able to reach our goals."

When it came time to choose a technology vendor, Dennis Morris, senior network administrator for Jackson County School District, says the choice was always Cisco.

Executive Summary

Jackson County School District

- Jackson County, Alabama
- 810 employees

Business Challenge

- Large geographic area covered by the district made network administration difficult and time consuming.
- Multiple telephone service providers in the district resulted in expensive toll calls between sites.

Network Solution

- Fiber-based Cisco WAN
- Converged voice and data network solution, with Cisco Unified Communications

Business Results

- Expanded curriculum and ability to customize learning programs for individual students
- Standardized voice communications system, and increased bandwidth support new applications and technology
- Savings in overall telecommunications, including toll calls, maintenance, support, travel, and professional development

"Cisco switches work 24 hours a day and we can rely on them," he says. "It offers management software that lets me see and administer the switches remotely. Beside the high quality and reliability, the company is innovative – it continues to develop new solutions that can tie into our existing network, allowing us to really leverage this investment."

With the long-range plan in place, the school district has been successful in procuring funding. In 2003, the school district received E-Rate funding to deploy a WAN/LAN architecture and a converged voice and data network. In 2007 the district once again received E-rate funding to upgrade its WAN and increase its bandwidth to support the district's increasing use of distance learning and other IP supported services.

The district's wide geographic area meant working with the several different phone companies and service providers that covered the area. Calls and faxes among the sites incurred toll charges. A second concern was that network disruptions were difficult to pin down, and repairing a switch or other network problem often meant driving an hour or more to a specific site. The cost of travel and the loss of time made network maintenance costly.

"We firmly believed that convergence was the solution; we helped create a ROI [return on investment] study that showed that in just three years they could pay for the entire solution just through the savings on phone lines and long distance calls," says Selby. "We knew a unified phone system, a centralized location for the regionalized WAN servers, and a converged voice and data solution would help the district run more efficiently and better serve its students."

The multiphase project started with a new high-speed fiber-based Cisco WAN to provide the bandwidth to support convergence. Cisco 2821 routers were installed at each location to provide a 100 Mbps or 1 Gbps handoff between the LAN and WAN. The routers would also be used as the voice gateway to interface to the public switched telephone network. The core network solution included Cisco Catalyst® 6500 and 4500 series connected with 10 Gbps links for aggregation, and Cisco CWDM (coarse wavelength division multiplexing) technology was employed to make better use of the fiber infrastructure.

To standardize voice communication throughout the school district, the WAN design included Cisco Advanced Unified Communications equipment. Cisco Unified Communications Manager and Cisco Unity Unified Messaging were deployed, along with Cisco Unified IP Phones 7900 series.

Once the fiber WAN was installed, the school district could upgrade its internal LAN equipment to extend the converged environment throughout each campus. The LAN equipment included Cisco Catalyst 3750 series and Cisco 2940s in each classroom. The internal cabling solution included fiber to each classroom and CATe cabling within each classroom. Cisco Lightweight access points and Cisco Wireless LAN Controllers were deployed, providing full wireless coverage throughout the campus LAN.

Business Benefits

Today the district supports 2400 computers and multiple, district-wide software programs on its network. Distance learning is available at all of its schools resulting in a significant expansion of the curriculum. An IP phone is located in every classroom enhancing communications with district staff and parents. The IP phones also increase security at schools, as do the 387 IP security cameras located throughout the district.

"The greatest benefits of this new technology are those realized by our students," says Dr. Guess. "The distance learning program is phenomenal because it has expanded our curriculum and gives our students opportunities that we could not offer before." The flexibility inherent in distance learning programs means that the schools can individualize plans for classes and individualize programs for individual students. "It means we no longer need to force a student into a set schedule," she says. "We can develop, for instance, a four-year program for a high school student that is customized to their individual strengths and needs. Instead of a student adapting to an instructional plan, we can mold the instruction to fit a student's talents, interest, and needs."

The district is also benefitting in big ways from an operational standpoint. Cisco Unified Communications has enabled staff at the disparate sites to more effectively communicate and collaborate. Teachers with particular strength in a specific subject area, for instance, can now more easily share that knowledge among schools. In fact, a recent accreditation process lauded the district with special commendation for its communications system.

Now if a school is having a network problem, Morris is no longer logging driving hours and miles to address the issue. He or someone on staff can see from a centralized location every phone and every computer connected to a switch, and in most cases address the problem remotely. Labor-intensive administration for moves, adds, and changes has disappeared.

Moving forward, the district will continue to grow its distance learning and video streaming programs, planning to package lessons for students to utilize as needed.

"We are working hard to maximize the use of the technology we have," says Dr. Guess. "At the same time, we are looking to the future. We know that technology is constantly changing and presenting new opportunities. We believe our collaboration with ITS and Cisco has provided us with a sound foundation on which we can continue to build, and that our students will continue to benefit."

For her and ITS' part, Tomi Selby is happy to apply her company's expertise and commitment to quality customer service to her K-12 clients.

"We are inspired by school districts because they are always saying 'what is next?'" says Selby. "Every dollar they spend on technology is precious, and they will not stop looking at what is next because they do not want their students left behind."