

Mansfield Independent School District (MISD)

EXECUTIVE SUMMARY

PRODUCTIVITY IMPROVEMENTS

- Educational, extracurricular, and community collaboration improved through IP-based distance learning labs and videoconferencing
- Improved security infrastructure through IP video surveillance cameras integrated with the fire and security systems, including police department access
- Average time to deploy voice communications at new schools reduced from weeks to two days
- Reduction in average time required for moves, adds, and changes from five days to five minutes
- IT staff productivity improvement through centralized, in-house management of a consolidated voice, data and video network

DIRECT COST SAVINGS

- Recurring operational expenditure savings of US\$20,000 per month
- Reduction of total recurring monthly telecom operating expenditures per student by 50 percent
- Reduction in monthly recurring carrier expenses per phone line from US\$15.50 to \$0.89

Organization Overview

Mansfield Independent School District (MISD) is one of the fastest growing school districts in Texas, with a current total student population of over 25,000 and growing at the rate of 2,500 new students each year. The district's student population is projected to more than double over the next eight years. To accommodate this growth, the administration plans to open three to five new schools every year for the next ten years.

Business Challenge

Prior to the deployment of an IP Communications solution from Cisco Systems®, MISD relied primarily on a Centrex service from its local carrier. The district had nearly 1,000 Centrex lines in service, with average monthly recurring expenses of US\$15.50 per line. Moves, adds, or changes (MACs), and any phone system repair and maintenance work required service calls to the Centrex provider. The school district did not have a centralized voicemail system, and placed strict limitations on the number of phone lines a school could have due to the high expenses.

According to Ray Jaksa, chief information officer for the district, "When I came to Mansfield, the district had eight different companies that were doing the phones here. It was spending almost US\$200,000 for phones and phone systems each year and had only four phone lines available at each of the 15 campuses."

The Solution

The school district knew it needed to make changes in order to accommodate its rapid growth. It entertained three options for moving forward:

- Deploy an in-house IP Communications system
- Deploy an in-house time-division multiplexing (TDM)-based digital private branch exchange (PBX) system
- Continue with Centrex services

As this case study will show, the return on investment (ROI) case for deploying an internal Cisco IP Communications system was very clear. MISD deployed its Cisco IP Communications solution



in early 2003, and currently has a Cisco CallManager server with approximately 500 IP phones and 300 voicemail ports on a Cisco Unity™ Unified Messaging server. The school district has another 1,000 digital phones that are not IP-based and it is in the process of eliminating them. As of June, 2005, the district has been using its Cisco IP Communications solution for two and a half years.

Benefits

Thirty months after deployment, the ROI benefits that MISD has already realized have allowed the district to manage intense growth in its student population and network while actually reducing the number of full-time network engineers it has on staff and keeping recurring monthly operational expenditures unchanged.

In addition to the direct cost savings, MISD has realized numerous IT and non-IT employee productivity benefits as a result of the Cisco IP Communications deployment. MISD is in the process of taking full advantage of its IP Communications infrastructure with additional productivity-enhancing applications such as videoconferencing for distance learning and voice broadcast messaging for pan-district announcements.

(1) Maintained Steady Operational Expenditures While Doubling in Size

As the size of the student population and the corresponding network has doubled over the last three years, MISD has managed to keep its overall IT, telecom, networking and internet recurring operational expenditures constant at approximately US\$240,000 annually (\$20,000 per month). If the school district had either decided to continue with its Centrex services or to deploy a traditional, TDM-based PBX, its operational expenditures would have “absolutely” doubled at the very least, according to Jaksa. “The phones and schools have doubled in numbers [since we deployed Cisco IP Communications], but the monthly [telecom] expenditures have stayed the same for the last three years,” he explains. “As we add phones our cost [per line] goes down.”

Given that the initial capital investment of the Cisco IP Communications solution is virtually identical to the initial investment associated with a traditional, internal PBX system, according to Mr. Jaksa, the ROI calculation for the school district was immediately evident. The district expects the initial US\$1.2 million investment in Cisco IP Communications to pay for itself within five years of deployment, based on recurring operational expenditure savings alone. This is in addition to the productivity and flexibility benefits the school district has realized as a direct result of deploying Cisco IP Communications (faster MACs, less time required to network a new school, etc.).

Furthermore, the operational expenditures per line and per student continue to drop as the scale of MISD's deployment expands. The larger the school district gets, the more drastic the recurring savings will be as a result of the district's decision to deploy a Cisco IP Communications solution.

Part of this has been possible through the support MISD now receives through Cisco Remote Network Operations Services for IP Communications. As Jaksa explains, “I have a total of 13 staff for IT, networking, and voice communications. There is only one staff member who manages all my IP Communications and voice services for the whole school district.” Cisco Remote Network Operation Services complement the district's internal IT skills with the experienced IP Communications IT skills of Cisco Remote Network Operation Services team, and helps reduce the training time and expenses required to maintain their networks.

(2) Improved Educational Capabilities through IP-Video Distance Learning, Videoconferencing, and Meeting Broadcasts

MISD has equipped every classroom from 7th grade and up with distance learning facilities that are integrated into its IP Communications network. The learning lab system is extremely flexible and mobile, according to Jaksa. “You can literally take our distance learning labs to any classroom, plug them into the jacks and have them running.” The system is also designed to alleviate scheduling constraints for individual classrooms. Through a centrally managed server, any teacher can give a class presentation, have it stored, then any classroom can play it back from any distance learning lab whenever it is convenient for the students to view it.

In addition to remote classes, faculty and students both take advantage of the videoconferencing and broadcast capabilities of Cisco IP Communications solution for a variety of other educational purposes. As Jaksa explains, “We also do vertical teaming for teachers, where they can collaborate and share information with each other. We even had student club meetings where, for example, several clubs from different schools held one meeting at one time from different campuses. They used the distance learning lab to share and talk with each other.”

And it's not just the faculty and students that have benefited from the IP videoconferencing capabilities. The school district also takes advantage of the system to broadcast its school board meetings to all interested parents. This has had a tremendous impact on keeping parents involved in district-wide school administration issues even as the district has doubled in size. "We're using technology not only for education, but also for the community," Jaksa explains.

(3) Improved School Security through IP Video Surveillance Cameras

MISD is also using its Cisco IP Communications solution to improve security. The school district currently has four schools that are each equipped with nine IP video surveillance cameras. In the future, MISD plans to have 64 cameras at each high school, 32 at each middle school, and 16 to 24 at each elementary school. The video cameras, access control, fire system, and security system will all be integrated into one system running over the Cisco network. Additionally, the Mansfield police department will have secure access to the district's IP video surveillance system from department headquarters for use in the event of an emergency.

(4) Significant Reduction of Monthly Per-Line Carrier Expenses

A major component in the aforementioned drop in average operating expenditures per student has come from reduced telecom carrier expenses. According to Mr. Jaksa, the school was spending US\$15.50 per month per line for Centrex managed services three years ago. Now that the Cisco CallManager system is deployed, its average monthly carrier expenses have dropped to approximately \$0.89 per line.

MISD now only requires a very limited number of primary rate interfaces (PRIs) for its phone connectivity outside of its WAN network, which has proved much more cost-effective than paying for a managed Centrex service.

(5) Faster Moves, Adds, and Changes

Before MISD deployed its Cisco IP Communications solution, it depended on its Centrex provider for any moves, adds, or changes (MACs). The entire process typically took between three to five days to complete. This timeframe "was required even to do basic maintenance, such as changing a number or setting up a forwarding number. Someone would actually have to physically come out and do it," Jaksa explains.

Doing even the most basic MAC involved paying service fees to an outside provider. Depending on the complexity of the MAC, the service fees could be substantial. "We were charged as much as US\$120 just to have a technician come to the school, for any kind of service, and in some cases it would cost us as much as \$1,000 just to move a line", Jaksa says.

Now, standard MACs for any phone within the school district can be accomplished in less than five minutes. "Within any facility we can literally pick up a phone, move it to a jack that has inline power to it, and just by making a few small adjustments, have it work," he continues. This is possible because of the easy-to-use Web interface that enables the IT staff to perform MACs and other basic maintenance remotely.

(6) Reduced Time Necessary to Bring a New School Online

Prior to deploying Cisco IP Communications, wiring a new school for voice and data networking was a project that could take several weeks, depending on the facility. One of the key benefits of Cisco's CallManager for MISD has been to greatly simplify this process.

For example, it recently took only two days for the IT department to install 168 IP phones and get the entire network operational at a new high school building. "Two IT staff members went out and set the patch cables to the inline power and set the 168 phones on the desks," Mr. Jaksa explains. "The telephone staff member then programmed the phones to meet the needs of the campus." Prior planning is essential to make this process efficient, but with the phone programming planned out in advance, the actual execution is extremely fast.

This speed and flexibility has been critical for MISD because the district has added 11 new schools and three other new facilities in the last three years.

Conclusion

Now that the initial deployment of Cisco IP Communications is complete, MISD is making plans to integrate additional third-party applications into the system. For example, the district plans to deploy a centralized time clock application so that all staff can sign in and sign out through their Cisco IP phones. MISD is also implementing a pan-district voice broadcasting system so that the central administration (or the local police department, in emergency situations) can easily make announcements over the PA to all schools in the district.

One of the lessons learned by MISD's IT department over the last three years is the importance of standardizing on a single vendor when converging voice, data and video networks onto a common IP platform. As Jaksa explains, "By incorporating everything into one package, we really got a great cost reduction in our overall expenses over time. We've really, really experienced a lot of good things from the Cisco product since we put them in."

MISD also recognizes the importance of choosing a vendor that offers solid, ongoing support. According to Jaksa, "What we have had is great support from Cisco and great cooperation in trying to plan what we want to do in the future with Cisco's products. I've been very pleased with what we've had."

For more information

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