



▶ Do the Math

Emtec's VoIP implementation adds up to big savings for West Windsor-Plainsboro school district.

The Client:

Contrary to mathematic principles taught in its classrooms, the West Windsor-Plainsboro Regional School District in central New Jersey recently demonstrated that it is possible to achieve addition by subtraction.

The basic formula goes something like this: 15 schools minus 500 Centrex phones equals more value, more features and more potential. The district realized this anomaly last summer when it completed a major voice and data convergence project with the help of Emtec, Inc. By replacing its existing Centrex phone system with a Voice over IP (VoIP) solution, West Windsor-Plainsboro found it was able to save enough money to pay for the new system while also generating a number of other immediate benefits and establishing the basis for future improvements.

"Once we began to cost this out, we realized very quickly that the yearly savings from eliminating more than 500 lines of Centrex would pay for the cost of the new phone system in a very short time," said Rick Cave, the school district's Director of Technology. *"At the same time, we were able to replace 10 different phone systems, ranging in age from two years old to ten years old."*

Numbers Game:

Centrex services are basically "PBX-less" business phone services in which all the functionality resides on a Class 5 switch on the carrier's network. Since the carrier owns and operates the switch, it also assumes both the capital cost of the equipment and the day-to-day management responsibility for users.

Of course, the carrier passes those costs on to the consumer in the form of hefty per-line usage fees. In

addition, there are long distance and local connect charges, as well as extra charges for user moves, adds and changes. Nemertes Research has benchmarked that the typical user pays roughly \$100 per user change.

"Cost was the driving factor for West Windsor-Plainsboro because their Centrex costs were sky high," said Emtec Solutions Engineer, Dave Pfister III. *"They were paying for more than 500 Centrex lines, but 30 percent might not be used in any given month. Unfortunately, the lines still have to be paid for. When somebody does need to use that line, it has to be available. It's just a huge expense."*

Less is More:

With an IP telephony solution, those costs drop to virtually zero. What's more, delivering phone calls and other voice services over the data network simplifies network configuration and results in easier management and higher reliability. And then there is perhaps the biggest bonus of all — instead of continually paying rent for a phone system, the organization actually owns its IP telephony system.

The key to a successful VoIP implementation is having a data network in place with the bandwidth to handle the additional voice traffic. West Windsor-Plainsboro didn't have an attractive alternative to the Centrex phones until it installed a Fibre Channel WAN to handle the district's data needs two years ago.

"Once we had a fibre network in place, the VoIP solution became a real possibility for us," said Cave. *"We did the analysis and determined that our network was stable enough and that we had plenty of bandwidth to handle the phone system. After that, it was a fairly easy decision to make."*

A Quantum Leap:

When the district opened a new elementary school two years ago, Emtec was involved in the pilot project to set up a VoIP solution for that facility. When the school board determined that it would be cost-effective to place the remaining 10 schools in the district on a VoIP system, they opened up a bidding process. Emtec came in with the winning bid.

"We were very fortunate that they submitted the winning bid, because that's who we wanted in the first place," said Cave. "We were lucky it turned out that way, because we had worked with them on the pilot project and we knew we were dealing with people who could do the job."

Emtec implemented Cisco's Architecture for Voice, Video and Integrated Data (AVVID) running over the two Cisco CallManager IP PBXs that had previously been installed at the elementary school pilot project. In addition, Emtec installed ten 1760 routers and four 2600 routers at other school buildings, with Cisco 7940 and 7960 IP telephones deployed primarily in administrative settings and thirty in-line power switches to provide primary power for the phones.

Three issues made this project a bit trickier than normal. The system had to interface with the district's existing Avaya Octel voice mail system; there had to be extensive redundancy features to ensure none of the schools would ever be without emergency phone service; and it all had to be accomplished over a six-week period during the summer break so there would be no interruption in service once school was back in session.

Each of those goals was met, and Cave agreed that Emtec's superior project management methodology employed by their communications group played a key role.

"Our project management was the biggest differentiator," said Pfiester. "We had weekly status meetings to let them know exactly what our progress was, what the issues were, what was out standing, and the time frame for the next phase. At no point during the entire project did they ever wonder what was going on."

"It was a great partnership between West Windsor-Plainsboro and the Emtec team," he added. "They supplied the information we needed in a timely fashion so that we were able to deploy and configure the equipment, and train everybody by the deadline to meet their requirements."

With the exception of a small delay after implementation while two carriers ironed out which would handle the system's PRI access trunks, Cave said the implementation went off without a hitch. Users have a system that offers them more flexibility than their previous system, with increased redundancy and directory features. Plus, they now have the infrastructure that will allow them to implement more advanced features such as video, XML applications and unified messaging in the future.

"Now that the system is stable and people are comfortable with it, we're going to start looking at utilizing the additional potential the new phones have," said Cave. "Emtec did a very good job for us. It was a very positive relationship, and it continues to be. I have a pet peeve about companies that send you technicians who don't know what they're doing. That has never been an issue with Emtec. They are very knowledgeable and very supportive, and I think we've been fortunate to work with them."

About Emtec: Established in 1964, Emtec, Inc. is a systems integrator that provides IT services and products to the federal, state, local, education and commercial markets. Our market leading value-based management methods, coupled with best-in-class IT technology, consulting and development services, address a wide range of specific client needs, as well as support broader IT transformation initiatives. Emtec's service capabilities span the United States, Canada and countries around the globe.