



▶ The Real Deal

Communities prepare for the future with Emtec's networking solutions.

In the popular “Sim City” series of computer simulation games, users create their own cities from scratch and can easily correct mistakes with the click of a mouse. Unfortunately, it isn't quite so easy in the real world, where the consequences of decisions made by municipalities and their various public agencies last for generations to come.

With help from technology provider Emtec, Inc., many communities are resolving immediate, real-world communication problems while also setting the stage for numerous future improvements through the implementation of converged voice and data networks.

“By enabling the delivery of communications services through a common Internet Protocol (IP) infrastructure, these municipalities experience a number of immediate benefits such as improved efficiency, manageability and reliability,” said Dave Pfister, Emtec Network Architect. *“What is really exciting, though, is the enormous potential for future benefits due to the advanced capabilities of a converged network.”*

All for One:

One municipal government in a northern New Jersey community recently needed help revamping a communications system that had become too fragmented due to the existence of multiple phone systems and data networks. City leaders wanted a solution that would rein in rising equipment and support costs while also improving communications among various public entities. The township called on Emtec, largely due to the company's growing portfolio of similar solutions for communities and school districts throughout the state.

“We have demonstrated our expertise again and again,” said Pfister. *“When they looked at our past experiences with these types of projects, they realized it could be implemented efficiently. They were very comfortable that we could do the job.”*

Emtec's team of networking engineers designed and implemented a converged network that allows various groups to share resources and applications to enhance security, improve communications and responsiveness. With this solution, the community was able to merge several different township entities — including police, fire, public works and the board of education — including all of their school buildings and the public library system onto a single, township-wide, broadband network.

Emtec installed a Cisco Catalyst 6509 switch to connect the fiber-optic network. The modular, flexible Cisco Catalyst 6509 optimizes IT infrastructure utilization and maximizes return on investment by using an architecture that supports a wide range of services including data and voice integration and LAN, WAN, and MAN convergence. In addition, Cisco Supervisor 720 engines let the switch aggregate multiple Ethernet desktop links and include security features, such as denial-of-service mitigation, usually reserved for the core.

“We put them all on the same fiber backbone and centralized Cisco switch, so for all intents and purposes, it is one big network,” said Pfister. *“Adding Voice over IP (VoIP) was a critical piece. From a communications perspective, that has eliminated their dependency on local phone lines and enhanced their ability to communicate with each other. That was their ultimate goal.”*

Voice is Key:

VoIP no longer is a cutting-edge gamble — over the past two years, it has demonstrated functionality, security and availability. A measure of the community's confidence in Emtec and the technology is the fact that its police and fire departments were selected for the VoIP pilot programs.

"Communications for police and fire are critical, so there was no room for failure," said Pfister. "The installations went off without a hitch. They were reliable and flawless from the moment they went live. Since then, they have extended VoIP to the schools, the library system and the other municipal entities."

With virtually all city, school and library employees on VoIP, the township resolved many of previous communications issues — including an inability to forward calls to employees in other departments. Today, everyone enjoys such features as call forwarding, caller ID, four-digit dialing, voice mail and advanced directory services.

The main benefits of the new system are efficiency, manageability and new functions, but there are expected cost savings as well from centralizing moves, adds and changes and from eliminating lines that were not being used. There are also many potential benefits down the road. Because VoIP treats voice as if it were any other kind of data, users will eventually be able to attach documents to voice messages or participate in virtual meetings using shared data and videoconferencing.

Keeping it Secure:

While enhancing communications was an important goal of the converged network project, township officials made it clear they did not wish to sacrifice security.

"They wanted the ability for all the entities to communicate with each other, but remain separate from a security standpoint," Pfister said. "The police, for example, required confidentiality for the sensitive data on their servers. Therefore, there was a great deal of configuration that had to be done on the core Cisco device to give them the ability to share resources, like the Internet, but also make sure they are set up on their own little network within the big network, with all the proper security."

To augment security, Emtec also replaced the township's existing firewall with a new firewall appliance that sits between the Internet and the internal network. In addition, Emtec installed a Cisco firewall module inside the switch. The firewall module allows any port on the device to operate as a firewall port and integrates firewall security inside the network infrastructure.

"With this network, they have probably become one of the most technologically advanced townships in the state," said Pfister. "They are really set up for the future. With the implementation of this architecture, they have positioned themselves to enable expansion of their networking and telephony capabilities well into the future."

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.