



## Emergency CallWorx helps TN agencies migrate to next-generation 9-1-1

Written by Annemarie Mannion

Who needs expensive hardware? John Ellison, executive director of 9-1-1 services in Shelby, TN, would not mind doing without it. He also wants to be ready for next generation 9-1-1. Those are two reasons why his county recently selected Emergency CallWorx to answer its needs for 9-1-1 call taking. He said Emergency CallWorx is doing something innovative in the industry. It is relying on less costly, easily upgradeable software to provide 9-1-1 services.

“One of the things I like is that they use a lot of open source technology,” Ellison said. “It’s software that you don’t have to pay to use. It lowers their costs and allows them to come in at a lower price.” Emergency CallWorx was the lowest bidder of the 10 vendors that went after Shelby County’s call-answering business. The county selected the company’s CallStation product for its call-answering function. CallStation provides call taking and mapping for agencies that have a dispatch application but need to add the latest VoIP, wireless mobile and next-generation 9-1-1 enhancements.

Emergency CallWorx, based in Huntsville, AL, was founded by Craig Dollar, a veteran in the 9-1-1 industry. Dollar said his company seeks to eliminate overlap in functionality and is focused on improving work flow, particularly at smaller, rural 9-1-1 emergency centers that have limited staff, equipment and budgets such as Shelby County.

Dollar developed his company’s products after spending more than 20 years in the industry and observing what works and what does not. “I started in the late 1970s doing installation work in the telephone business and eventually started in public safety in 1987 selling enhanced 9-1-1 systems,” Dollar said. “It was the infancy of the technology movement in 9-1-1 call processing.”

Having multiple vendors and overlap in functionality was clearly a problem. Dollar said it is not unusual for even a small 9-1-1 center to have different vendors providing services for the range of 9-1-1 functions, including location determination, call answering, CAD, mapping, records management and radio dispatch. “Throughout that period, I visited a lot of sites and interviewed a lot of customers,” Dollar said. “Some vendors fill all functions, and some handle only one. I continuously saw gaps and overlap in what companies I was working for were doing.”

For providers of these services, Dollar said it does not make financial sense to integrate the functions into one application. “People have thought about it before, but it would be disruptive to their business model,” he said. “It had to come from a new company or a start-up. Those older companies are slow to innovate. They add features and functions. But they don’t innovate.”

Jeff Robertson, executive director of the 9-1-1 Industry Alliance, which works to advance and improve 9-1-1 service, also noted the problem. He estimated that in more than 6,300 dispatch centers in the United States, each function of dispatching is run on separate applications. “We see a distinct advantage for companies that assist in providing a suite of applications that work together and can better share information,” Robertson said. “The days of selling seven different applications into a dispatch center are coming to an end.” Whether

the 9-1-1 center is in a smaller, rural county like Shelby County or in a large, urban environment like Chicago, Dollar said the functions of taking calls, plotting maps, and managing and deploying emergency resources are much the same. "Their work flows may be different, but their needs are the same," he said. "The systems I saw weren't working as smoothly as they should for 80% of the market, which is a two- to six-person call center."

Having multiple vendors may make sense for service providers, but it does not benefit dispatch centers. "You could have a center with different vendors for those different functions," Dollar noted. "And they'd have to integrate the vendors at extra cost. I noticed this and participated in this over the years and never lost my desire to solve it."

Unlike most systems that rely on various hardware components integrated into one system, Dollar said his company is unique because it has developed a software-based package that integrates call taking, CAD mapping and dispatch functions. According to Dollar, Emergency CallWorx uses Java programming language to combine functions on a secure Intranet browser. The result, he said, is improved work flow because dispatchers need not switch from station to station to perform different functions of taking an incoming call, mapping a location, or deploying emergency resources. Another advantage of Emergency CallWorx is improved fault tolerance. Dollar explained his product offers redundancy (from dual servers) with the built-in ability to have complete data replication and automatic switchover when faults are detected so the system is always available. It is automated and requires no human intervention. "Typically, systems have a single server or possibly two that act as a backup to each other," Dollar explained. "These are not real-time backups and require downtime and manual interventions. When VoIP call processing enters the equation as in the case of next-generation 9-1-1, calls are lost in fault conditions. Fault tolerance assures complete uptime and no loss of calls in progress or real-time data during a switchover." He said his system will have fault tolerance of up to 99.999 of system uptime. Under older providers, he estimates systems are 97–98% operational. And he said having high fault tolerance was out of reach of smaller dispatch centers.

"Until now, only very large CAD systems had this option," he said. "Our partnership with NEC, combined with the cost savings of a new architecture, has allowed Emergency CallWorx to offer this to all customers, providing rural sites with the same level of operation traditionally provided to well-financed systems." He said fault tolerance has been around for about 7 to 10 years, but older companies have not been innovative enough to design this level of functionality into base products.

## **Lewis County, TN**

While Shelby County will use only the call-answering function, Lewis County, also in Tennessee, recently selected Emergency CallWorx to provide a multi-agency next-generation 9-1-1, mapping and computer-aided dispatch system. Lewis County is just the sort of small operation the company has targeted. The company has signed five customers and three distributors since it was founded in 2006. "We have five dispatchers. We're a very small county," Howard Moore, director of the Lewis County 9-1-1 center, said. "But we're building a new 9-1-1 center, and we wanted to get as updated as possible." Not having to purchase new hardware, particularly as implementation of next-generation 9-1-1 is expected over the next few years, was one of Moore's goals when the county opted for Emergency CallWorx. "The number one thing I considered was the next generation protocol that everyone is going to have to go to anyway," Moore said. "We won't have to buy new hardware. We'll get software upgrades."

When next-generation 9-1-1 becomes available, Moore said CallWorx's browser-based design will enable the county's law enforcement, fire and EMS agencies to receive and handle telephony, wireless and Voice over Internet Protocol (VoIP) communications. The company's full suite of products Lewis County will use include: CallStation; Dispatch Station, which provides for receipt of 9-1-1 calls, dispatching field resources, and sending information to mobile 9-1-1 users; WebAccessory, which enables local and mobile-authorized

users to view real-time calls, incident data and reports, as well as send and receive messages from remote locations; and AdminStation which, along with a Web browser, allow system managers to configure and manage all aspects of the application and database.

Moore said his company has used the products at a model demonstration at the Emergency CallWorx headquarters. "It appears it's much easier for dispatchers to handle," he said. Describing his county and its needs, Moore explained, "We're less than 300 square miles in size and most of it is woodland. We have 12,000 people and one town with 4,500 people. Crime is pretty low. It's a community of a lot of elderly people. We have a lot of ambulance calls."

Moore estimates that 25% of their calls are from cell phones. "Everybody is going to cell phones. Land lines are dropping like flies even though our cell phone service is terrible because of the rolling country and woodlands." The new products will be part of a new emergency center that is under construction. The county also is taking measures to improve cell phone service. "We're putting up a higher tower on our building. It will be at the 1,000-foot level, up on a ridge," he said. "And we're putting up more repeaters."

Like Moore, Ellison said one of his objectives was to get ready for next-generation 9-1-1. Even though his county is purchasing only the call-answering function, he said he expects it will mesh smoothly with its other existing products. "We already have a CAD system," Ellison said. "With wireless calls, we'll be able to get their longitude and latitude and it will pass the information into the CAD system."

He said just because the software CallWorx provides is free does not mean it is not reliable. "They use the Firefox Web Browser or Windows and Linux and MySQL (Server Database)," he said. "It's the integration of all of these products that I like. It gave us a level of comfort knowing their system is based on well-established, well-proven platforms."

Achieving geographic diversity was another of Ellison's goals. Because Emergency CallWorx is less expensive than other products, he said the county will be able to have its 9-1-1 system in two places. "A lot of rural places don't have that luxury," he said. "But in the newer system, it becomes financially possible to split the system."

Shelby County's centers will be in two towns that are 20 miles apart. One will be in Pelham, TN; the other will be in Columbiana, TN. Ellison said splitting the service will minimize the chance that service will be disrupted during a natural or manmade disaster. "Even if one center is completely blown down or burned down, we won't lose service," he said. "The citizens in our county will still be able to make 9-1-1 calls and won't even notice the difference."

Although Shelby County is purchasing only the call-answering function, Dollar said it will not limit what the county can do in the future. "That's all they needed right now. They have a legacy, large investment in CAD, and it's integrated with the county," he said. "They have the same software all the other customers have. They only see and use what they need to. But if they ever need another function, the functions are on site and can be deployed when they need them."

Emergency CallWorx also will provide maintenance at less cost than other vendors, Dollar said. "Every one of our devices—the server, the work station, the telephone—is an IP device," he said. "We can remotely see all of our devices from our headquarters. Remote monitoring is included in the base price. Other companies offer that at extra cost." As one of the company's first customers, Moore said Lewis County is willing to be something of a guinea pig. He noted that one of the problems with his previous vendor was a lack of service. "We had problems where we couldn't get help," he said. "Emergency CallWorx is going to be available 24/7. We've agreed to be a developer for them. We'll report any problems we have. If we find things that aren't working, we'll tell them about it."

With all the potential for making 9-1-1 service better and more efficient that next-generation 9-1-1 promises, Ellison and Moore agreed that being willing to look at your services and what vendors provide is critical to getting ready for the next phase of emergency dispatch. Both want to be prepared for next-generation 9-1-1 and whatever the future may hold, whether it is accepting text messages or video. “We aren’t afraid to change things,” Moore said. “Our vision is to have a system that handles all types of calls.”

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