

REAL WORLD CASE 2

The State of Maryland: Serving Its Citizens Without Using Wires

icy winds whipping off Chesapeake Bay chilled thousands of heavily clad spectators along a three-mile-long parade route in Annapolis, Maryland, moments after the swearing in of first-term governor, Robert Ehrlich Jr. While wintry temperatures don't qualify as an emergency, MEMA (Maryland's Emergency Management Agency) used the parade to test a NASA-funded, state-of-the-art emergency management system designed to aid first responders when natural or manmade disasters strike.

MEMA's main duty is to coordinate responses to major emergencies and disasters in Maryland. The inaugural parade proved to be a good occasion to test the emergency management system, which combines the latest in global-positioning satellite communications, cellular phone, geospatial, and microelectronics technologies.

MEMA gave GPS-enabled cell phones to 10 of its employees working the parade. One of a dozen satellites orbiting the earth captures each cell phone's location and relays that information back to a command center. The Earth Alert Emergency Management System, being developed by 3e Technologies International Inc., combines that data, collected in an Oracle database, with information received through a cellular network to map the exact location of each unit and display it on a PC screen. "You can see when someone crosses from the left to the right side of the street," says MEMA operations coordinator Clint Pipkin. The phones can be programmed with applications that let first responders share information about a disaster with the command center.

On inauguration day, MEMA's job was to keep the parade moving on schedule and to look out for anyone in the crowd who might be, in Pipkin's words, "funky or screwy." MEMA set up a command center in the state Capitol, where agency managers strategically positioned personnel on the street, monitored their movements, and verified their readiness. Watching agents move in real time on maps generated in a browser, managers could instantly reposition officers by voice or text messages so they could respond to incidents, perhaps mitigating problems. The test of the system was simple: Show the precise location of agents and whether they're on or off duty.

If the Earth Alert system is deployed in Maryland, the main user wouldn't be MEMA, which has a staff of only 40, but the hundreds of state, county, and municipal first-responder agencies. MEMA's endorsement of the system would be critical, Pipkin says.

Though any Web-enabled wireless phone can be used with Earth Alert, MEMA and 3e Technologies use Motorola i88s phones over a Nextel packet-data network employing the Global Systems for Mobile Communications protocol. Besides text messaging, the Motorola units can be programmed in Java 2 Micro Edition, used for cell phones, PDAs, and consumer appliances to provide pop-up menus on a small display screen in which the emergency worker would be able to respond to predetermined questions.

Pipkin envisions the Earth Alert system being used for an emergency that affects a specific area, such as a tornado, rather than one that blankets an entire region or state, such as a blizzard. "In a blizzard," Pipkin says, "there isn't anything to geolocate; snow falls everywhere."

For emergency workers, the Earth Alert system offers two critical features: a device to communicate warnings to properly position individuals before an event happens and a tool to collect timely information after a disaster hits.

For instance, the system can capture weather forecasts that identify the spot a tornado would most likely hit and notify the nearest first responders, sending them instructions using the GPS-enabled cell phones' text-messaging capabilities. To coordinate feeds about weather forecasts, traffic and road conditions, and other emergency-related information, 3e Technologies established a data-fusion center in western Pennsylvania, which will serve as a model site for future response call centers.

MEMA will use the system mostly after an emergency to gather information that could lead to a gubernatorial emergency declaration or presidential federal disaster-area decree, Pipkin says. "During an event, senators, congressmen, governors, and the president all want to know how much devastation is out there." Without automation, damage assessment is a time-consuming, paper-driven process that often takes hours, or longer. Automating it provides that information immediately.

Pipkin meets with 3e Technologies' business-unit manager Chris Sluss at least once a month to recommend ways the system can be improved. Among the suggestions: Create a menu-driven app that lets on-site responders answer questions such as the extent of destruction, kind of structure damaged, type of debris, and amount of insurance coverage. The first responders don't need to know the address because location information is captured in the handset, which is relayed to the back-end system via the GPS.

Case Study Questions

1. What is the business value of advanced mobile technologies to Maryland's emergency management services?
2. In what other government services could GPS serve to provide business value? Give some examples.
3. Are there disadvantages or risks associated with the deployment of GPS systems to monitor the location of people? Explain.

Source: Adapted from David Ewalt, "Fight Crime Without Wires," *InformationWeek*, February 9, 2004; and Eric Chabrow, "Emergency System on Parade," *InformationWeek*, March 10, 2003. Copyright © 2004 CMP Media LLC.