



Mass Notification: Who, What, When & Where?

by Jeffrey Steele

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For alerting masses of people to dangerous situations, select a technology suited for the types of users.



An example of an emergency text message from Cooper Notification's U.S. patented Roam Secure Alert Network.

Imagine a Columbine High School or Virginia Tech-style shooting rampage at a high school or university campus. Consider a fire in a high-rise, such as the one in the Cook County (Ill.) Administration Building that killed six people in October 2003. Ponder a hurricane bearing down on a shopping mall, and the lives potentially imperiled.

These kinds of scenarios have been much in the news in the past decade. And with each such news report that hits our TV screens and newspaper front pages, the call grows louder for mass notification systems to help alert potential victims of danger.

Mass notification systems incorporate a variety of response mechanisms to allow institutions to improve their communications in the event of an emergency. But as we'll see, the systems also can be used to improve the business processes of major corporations.

"The best definition of mass notification is a means to notify occupants of a building or area in a real-time setting," says Northford, Conn.-based Peter Ebersold, marketing director for Notifier, a division of Honeywell.

"There's some type of situation occurring and authorities are giving people instructions on how to respond. It could be a tornado warning, an Amber Alert, a lock-down at a school. It could be a bank robbery at a mall, or a university shooting."

There are many solutions available for institutions, corporations, military bases and governmental facilities, and few seem to be tailored to any one type of setting, situation or audience. But if they are to be effective, all should feature at least two common traits, says Jason Kneen, marketing communications manager for Notifier.



Cooper Notification's WAVES High Power Speaker Array is installed at Virginia's James Madison University.

“Having a comprehensive solution, and using IP technology that can span much greater distances than traditional hardwired systems, are both keys to making mass notification systems work efficaciously,” Kneen states.

HOW SYSTEMS DIFFER

To get a feel for the different environments calling for mass notification systems and how systems in them must differ, consider four widely varied settings and users.

The college or university campus. When people think about the need for mass notification systems, many think of a high school or college campus. Because tech-savvy children or young adults tend to populate these settings, it’s often assumed such a system would use cell phone or e-mail blasts as means of alert, Ebersold says.

“But the mass notification would not be limited to that,” he notes. “In fact, if they are in class, the professor may ask them to turn off their cell phones. So you also want to have a voice evacuation system – part of the fire or intercom system – that can reach people in individual buildings [with audible voice commands], and people on playing fields and in parking lots with ‘giant voice,’ a system of outdoor loudspeakers or sirens.”

The shopping mall. While text-message alerts to customers in a retail center would obviously be impossible, the above system could be tailored or fine-tuned to also perform effectively in the very different setting of a shopping mall, Ebersold says. The challenge in a mall would be that the mall itself would likely have a voice evacuation system, which would have to coordinate with any system installed in individual stores.

“A characteristic of a mass notification system is that there would be a central command station that would tie things together,” Ebersold reports.

“You might have automated voice messages that would be heard first, but then an incident commander might come into the station and do some live messaging to respond to any distinctive nature of this particular incident,” he describes.

K-12 Schools. A single mass notification medium can be an effective means of notifying a specific audience, says Ratna Reddi, vice president of marketing and business development for Sarasota, Fla.-based Cooper Notification. “Emergency text messaging systems are ideal for K-12 schools to send parent notifications, and for health care facilities to maintain Joint Commission compliance and issue emergency messages,” he describes.



A primary command center broadcasts live or pre-recorded emergency voice messages and/or instructions to an emergency voice evacuation system(s) and through a TCIP output to an e-mail or SMS system. The voice evacuation system, which also serves as a secondary or back-up command center, distributes the message(s) through the notification speakers and giant voice, while simultaneously activating visual notification appliances such as amber strobes and LED signs.

Unique applications. Mass notification systems aren't limited to helping people avoid man-made or natural disasters, says Frank Mahdavi, chief strategy officer for San Diego-based MIR3, a company that supplies the systems.

He points to the experiences of an important MIR3 client, a major retailer with 1,200 locations across the nation. The retailer's key objectives are delivery efficiency optimization, fuel and labor cost reduction and assuring proper inventories are delivered to the right stores at the right times. The retailer's logistics application creates a delivery schedule, which is in turn relayed by MIR3's mass notification system to managers at all 1,200 stores.

"The managers are told when their delivery trucks are arriving and how many boxes are on board, so they can provide temporary workers to offload those trucks," Mahdavi relates. "The truck drivers don't have to sit around waiting for the offloads."

There are also situations in which mass notification systems are altered to allow systems designed for one function to perform another. Massachusetts Institute of Technology (MIT), for instance, originally incorporated a MIR3 IT event notification system to automatically notify key personnel if an IT system failed.

"But post-Virginia Tech, MIT ordered additional telephone infrastructure and licenses to enable the institution to reach a larger target audience," Mahdavi says.

LACK OF STANDARDS

Bob Tamburri, training manager for South San Francisco-based TOA Electronics, thinks the term "mass notification system" means different things to varied audiences. "There's a lot of overlap in how these systems are designed and used," he says.

Compounding matters is the fact that no industry standard governing mass notification systems exists, he adds. Industry leaders are grappling with what guidelines should be used for integrating systems. The only exception in this standard-free environment is the U.S. Department of Defense guidelines written to address mass notification on military bases.

"For lack of any other standard, a lot of people in private industry have been looking at these Department of Defense guidelines, leading these guidelines to become a kind of de facto standard," Tamburri says.

SIDEBAR: IP and Network-Capable Notification Systems

Whether at a college or university, a corporate campus, military base, utility plant, airport, shipping complex or any other multi-building setting, IP or network-capable mass notification systems can provide solutions in tying together indoor and outdoor areas. In most cases, IP infrastructure already exists, Tamburri says. Wide-area paging, for instance, can link together buildings and outdoor parking lots and playing grounds. That can be accomplished wirelessly or by installing additional cable runs to outdoor areas.

“Ninety-five percent of time, IP will be part of the solution in these settings,” says Bob Tamburri, training manager for TOA Electronics, South San Francisco. “It could involve CAT-5 cable, optical fiber solutions, traditional wiring and sometimes wireless, depending on the environment.”

In these situations, IT administrators will have the responsibility of ensuring IP solutions have enough bandwidth to respond reliably, he adds. An advantage is that a single channel of audio isn’t very bandwidth intensive, which can be a blessing on a university campus or a government facility with enormous bandwidth requirements.

The advantage of an IP-based mass notification system is that it can integrate text, e-mail, instant messaging, telephone, PDA, fax machines, TTY for the hearing impaired and satellite based communications, says Frank Mahdavi, chief strategy officer for MIR3, San Diego. This makes the solution multi-modal, and that distinguishes it from a single-mode system far more susceptible to failure, he believes.

“The way to achieve maximum effectiveness is to choose multi-modality,” he asserts. “That’s because one mode may fail for some people, such as those whose cell phones are off or out of battery power.”

However, funding isn’t always available for multiple communication systems to be implemented simultaneously, says Ratna Reddi, vice president of marketing and business development for Sarasota, Fla.-based Cooper Notification. The solution is mass notification systems that are modular, scalable and can be expanded in phases, one layer at a time.

The screenshot displays the Enterprise mass notification system interface. At the top, it shows the user 'Melanie Kuderka' and the incident 'none'. The interface is divided into a left sidebar with navigation options and a main content area. The main content area shows a notification message in English (US) regarding a chemical odor in Lab 201. Below the message, there are two responses: '1: I received this message' and '2: I'm in the building, need assistance'. A statistics section shows 'Total Recipients: 00001', 'Total Contacted: 00001', and 'Total Responded: 00001'. A table below the statistics shows the response details:

Responses	Percent	Total
Response 1:	100%	1
Response 2:	0%	0
No Response:	0%	0
Not Contacted:	0%	0
Total	100%	1

At the bottom of the interface, there are buttons for 'CANCEL', 'EXPORT', and 'VIEW DETAILS'. The interface is powered by MIR3, as indicated by the logo at the bottom left.