

# maximizing communic



# emergency tation

by patrick stuver

**N**atural disasters on the scale of hurricane Katrina inevitably bring chaos and devastation, but the communication failure between government agencies following the crisis was more surprising to many than the hurricane itself. Katrina affected an area the size of Great Britain and left 80% of New Orleans under water. Television images showed thousands of people suffering for days while waiting for food, water and evacuation, prompting the question: **what took so long?**



If nothing else, Katrina forced local and federal government agencies to at least consider the deficiencies in their organizational and communication structures, as well as public safety capabilities. Failure to do so invites a repeat of the galling lack of competence that allowed the tragedy in New Orleans to unfold. To best avoid repeating the mistakes of the past, emergency agency employees need mass notification systems in order to implement, coordinate and manage disaster prevention and recovery efforts. 911 emergency communications centers are often overcome by calls during a disaster, so it is critical to have a mass communication system that can send out a singular message. Louisiana agencies could have utilized a mass notification system to reach bus drivers and private businesses to transport evacuees to other cities.

Mass notification is an automated system that sends voice and/or text messages to large numbers of people at once, preventing many of the communications failures that hamper disaster recovery and business continuity. A mass notification system provides government agencies and private companies with real-time situation updates, online messaging and conference calling to coordinate action and maintain continuity of government. Business continuity managers and government disaster planners are spurring the adoption of mass notification technologies quickly since 9/11, the Southeast Asia tsunami and, now, Hurricane Katrina.

### Communication Breakdown

The Department of Homeland Security now manages the Federal Emergency Management Agency (FEMA), whose National Response Plan promised "vastly improved coordination among federal, state, local and tribal organizations to help save lives" from storms, floods, earthquakes or terrorist assaults. The purpose of this department is to better handle emergencies such as Hurricane Katrina and

to improve communications between organizations.

Better communications were supposed to be a highlight of the plan, but FEMA officials were caught by surprise when the coordination of rescue efforts on August 29 and August 30, 2005 was hampered by an inability to communicate. Many telephones, including most mobile phones, were not working due to line breaks or the destruction of base stations or power failures. Although some base stations had their own back-up generators, this complicated efforts to monitor field conditions and coordinate response. It took up to six days to get working telephones to some FEMA employees on the ground.

In a number of cases, reporters were asked to brief public officials on



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the conditions in areas where information was not reaching them any other way. Radio provided tactical and emergency communications as well as health and welfare inquiries. Broadcasting and publishing on the Internet became an important means of distributing information to evacuees and the rest of the world.

More than 50 civilian aircraft responding to separate requests for evacuations from hospitals and other agencies swarmed to the area a day after Katrina hit, but FEMA blocked their efforts. Aircraft operators complained that FEMA waved off a number of evacuation attempts, saying the rescuers were not authorized. "Many planes and helicopters simply sat idle," according to Thomas Judge, president of the Association of Air Medical Services.

When multiple agencies arrived on the scene, they were often on different hand-held radio frequency bands and, as a result, could not coordinate their

efforts or communicate with each other. Conflicting messages during Hurricane Katrina relief efforts created confusion among state and local agency teams. Coordination with private relief agencies broke down and led to maddening delays. Water, food, clothing and medical supplies remained backed up in distant warehouses.

In addition to technical communication problems, the involvement of multiple government and private relief agencies caused issues because of multiple jurisdictions. This resulted in agencies that stopped communicating with one another and only focused on their own geographic areas. Total physical communication infrastructure was inadequate during Hurricane Katrina since urban response teams had to bring their own communications gear because there was almost no emergency communications capability left in the city.

The scale of the disaster, deficient contingency and disaster recovery plans, and communication and equipment failures were serious problems that led to slow recovery efforts. However, the lack of a reliable mass notification system between agencies and civilians was most significant. Many problems could have been prevented with the use of a mass notification system for effective communication planning and notification of government agency workers.

### The Business Story

After a disaster such as Katrina, business viability is an issue. Sometimes there is a crippling loss of key personnel. In other cases, recovery costs may be overwhelming, or customers may switch to other providers or simply lose confidence in a business' ability to recover. As such, business and media use of mass notification systems goes beyond employee safety. These organizations must also be equipped to restart their operations as quickly as possible by relocating to a temporary site, bringing in backup power or other services, repairing damaged

buildings or equipment, or recovering data from computer systems.

During a disaster such as Katrina, buildings that have been destroyed, damaged or are inaccessible may prevent agencies and private businesses from accessing their primary or backup headquarters. As a result, backup sites were located too close to primary facilities, rendering the disaster recovery plan useless. If the only communications link or the copy of the contact list is in either affected site, it is difficult or impossible to coordinate the disaster response.

Trained agency personnel may be prevented from reaching sites, end up in the wrong position to help or unable to reach a site due to transportation issues. Employees of a company may not know if or when they should report back to work. These problems can be resolved by using automated

emergency communications that alert groups of people with messages that utilize a variety of contact paths (phone line, e-mail, mobile phone, pager, etc.).

People in designated geographic areas can be informed of danger and told to evacuate immediately by using a mass notification system. Timely information to police, firefighters, medical teams and hospitals are fundamental to emergency preparation.

Polling and organizing responders during a large-scale disaster without mass notification makes a trying situation much worse. During Hurricane Katrina, for example, many emergency medical service coordinators did not have radios, which made locating them—much less confirming that they had arrived at the designated work locations—nearly impossible.

### How Organizations Can Prepare

Redundancy is one key to the success of notification solutions—not only are messages sent to recipients on multiple pathways, but the systems themselves are designed with multiple physical redundancies. For example, a vendor might lease dedicated phone lines from several different national carriers and store identical customer contact information in multiple data centers thousands of miles apart. Although no system should be considered foolproof, mass notification systems are not only efficient because they save time, but they also offer a level of reliability and security that a single system cannot match.

There are a number of activities that can help organizations prepare for and test their emergency notification and communication plans. These include verifying contact paths by establishing

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a routine “checkpoint” to ensure all contact information is accurate, as well as creating an emergency notification business card with instructions for both administrators and constituents on how to use the system. To this end, users can create instructions in advance, including pre-recorded emergency evacuation instructions, post-event instructions, recovery plans, action timeframes and other vital information. Organizations should also confirm “roll call” capabilities to track constituents’ safety as well as use a hosted notification system that is housed “off-site” to guarantee that your communications are “weather proof.”

In addition, consider the steps a coordinator must take to communicate successfully during a disaster.

*Initiating messages.* This can be challenging if communications or the command center are down. However, mass notification simplifies the task by reducing the number of necessary initiated messages. Since it is rare for phone lines, cell phones, Internet and texting to fail at the same time, notification to all intended recipients occurs by one or more methods.

A mass notification system allows the coordinator to issue a single message to an entire list of people, such as medical team members, vendors, parents, children, hospital intake liaisons or reporters. The chances of initiating messages are much better if only five, rather than 5,000, messages must be sent.

For a mass notification system to be accessible during an emergency, it must be able to initiate a message multiple ways (i.e., Internet and telephone); record and reformat messages multiple ways (i.e., voice or text message, live operators or system software); and accept messages from multiple initiators with authority if one is incapacitated. It must also be accessible through a minimum of two widely separated physical locations in the event that one becomes unavailable in a region-wide disaster. And it needs to

use redundant electrical power sources, communications carriers and Internet service providers to minimize the chance that it will be inoperative.

*Delivering messages.* It is necessary for the notification system to maximize the likelihood that messages will be delivered as quickly as possible. Provide message capability to all types of contact devices—landline phone, wireless phone, fax, ISP-based e-mail, BlackBerry (wireless e-mail), pager, PDA—and in as many different formats as possible (voice, text, SMS). Permit unlimited contact numbers for each person on the list, and allow a different order for each list member. Provide the ability to make unlimited attempts to contact each person on the list, until there is confirmation of receipt. Enable geograph-



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ic and contact-list data to be cross-referenced. Finally, ensure adequate phone line capacity so large numbers of messages can be delivered quickly.

*Selecting who to notify.* It is important that only critical participants are sent messages to ensure that unwanted phone calls do not lead to mass panic. The system should provide the ability to filter messages correctly by enabling the creation of unlimited lists and sublists, and providing geographic notification capability to evacuate neighborhoods and warn people.

*Mass notification.* Maintaining accurate contact lists is crucial. Members should be able to update their own contact information, including contact path preferences, through a user-friendly Internet interface or by telephone. Data must be properly secured by using security software and developing and implementing adequate security procedures. List members must have confidence that the system administrators will protect their privacy

and will not release their contact information to any third parties.

*Receiving messages.* It is very important for a disaster coordinator to be able to find out who has been contacted successfully, and, sometimes, what their responses are. A mass notification system needs a mechanism to receive and report responses to facilitate two-way communication. The system must be able to receive responses (i.e., by way of a touch-tone signal) to confirm that a message has been delivered successfully. A polling feature also is important to enable the receipt of multiple responses via touch-tone signals, i.e., press “1” if they are already at the disaster site.

*Critical tasks.* Mass notification systems greatly reduce time spent on communications and free emergency personnel to deal with rescue and recovery work. The ability to initiate a

few messages and receive hundreds of thousands of responses formatted in a readable report a few minutes later is an enormous time-saver. Additionally, a well-designed notification

system will be simple to use and will not require extensive training. It also should offer several key features that make emergency personnel more effective, such as the ability to create and store messages in a library before disaster even occurs, and conference bridging (spontaneous conference calls) for real-time communication among some or all members of a list.

Timely communication is critical during emergencies at the local, state or national level. This is when the importance of our country’s telecommunications and broadcast systems becomes clear. Disasters on the scale of Hurricane Katrina serve as a reminder on the importance of communications, no matter what type of organization is at stake. ■

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