

5 Ways Social Media

Improves Emergency Management

New tools can reach a wider audience more quickly and allow for two-way communications

BY RUTRELL YASIN | GCN STAFF

EMERGENCY MANAGEMENT, once the province of official channels, is going where the people are.

More people now use social media tools to report emergencies or call for help, and they expect government response agencies to be actively engaged in using the technology, too, according to a recent Red Cross survey.

The American Red Cross' "Social Media in Disasters and Emergencies" survey of 1,058 adults indicates that 18 percent would turn to digital social media if calls to 911 were unsuccessful.

Sixty-nine percent of the adults surveyed said emergency response agencies should regularly monitor their Web sites and social media networks so they can respond promptly to requests for help posted there; 74 percent said they would expect help to arrive within an hour.

Although the public's expectations for response times might be high, one thing is certain: Government agencies are using Web 2.0 technology and social media tools such as Facebook and Twitter to monitor and respond to events and collaborate with partners during emergencies.

From the Federal Emergency Management Agency to state and local entities, emergency op-

erators are using social media and Web 2.0 technology to reach out and interact with the public and enhance communications among partners.

Social media, Web 2.0 or Web-enabled technologies provide a way for emergency management personnel to solve data and other types of interoperability and communications problems, said Robert Greenberg, CEO of G&H International Services, a consulting firm that specializes in emergency management and preparedness.

After almost every major incident since the 2001 terrorist attacks, emergency responders have cited communications and information-sharing failures. There are many solutions for sharing information that have resulted in cumbersome middleware approaches tied to big proprietary data warehouses, Greenberg said.

"Web 2.0 technologies begin to solve that in a number of ways [because] they are built from the beginning to be socially used and oriented around collaboration and sharing," Greenberg said.

Social media tools allow emergency managers to disseminate information to wider audiences, interact with the public, monitor social media networks to get a better sense of what's happen-

ing on the ground during a crisis, get better situational awareness, and improve collaboration for sharing information during an emergency and sharing of best practices and lessons learned.

Here's a look at five ways social media and Web 2.0 are changing emergency management.



I. A Wider Audience

San Francisco's emergency management agency has a presence on Facebook and Twitter and is moving onto YouTube as a way to disseminate information about emergency preparedness, said Brian Dudgeon, deputy director of the city's Department of Emergency Management.

San Francisco officials are working to build resilient communities within the city based on established relationships. The philosophy is that communities that solve problems together are better off during a crisis, Dudgeon said.

Social media is used as a platform to expand on that concept. Trusted communities can be churches, families or virtual networks that the city can tap into, such as partnering with the Red Cross or Neighborhood Empowerment Network.

The city uses Twitter to issue public warnings, although not as a primary method. It is used more as a redundant system because the company that owns Twitter is located in San Francisco, but the network tends to go down when it is overwhelmed by events such as an election or World Cup soccer match, Dudgeon said.

The city also uses a text-based notification system, AlertSF, and encourages Twitter followers to sign up for those alerts and AlertSF subscribers to use Twitter. More information is pushed onto Twitter, such as traffic and weather details. AlertSF is used solely for emergencies because officials do not want to clutter people's cell phones with messages, Dudgeon said. The city also uses an outdoor

public warning system.

"Social media can't replace everything," he said. "It is not a one-size-fits-all, but it is a great tool to have in the toolbox."

San Francisco is starting to explore issues of social media and mutual aid with other jurisdictions. For instance, if there is an earthquake in San Francisco, for the most part, city government and the public won't be online immediately. There is only so much bandwidth that can be put through satellites, and social media is not going to be running for the majority of the Bay Area, he noted.

As the city comes back online, emergency managers would be dealing with thousands of other problems. Why couldn't Los Angeles emergency personnel help with getting information about the situation out via social media? Dudgeon asked. Or San Francisco could assist Los Angeles if there were huge fires in that city.

"We don't have to be in their emergency situation center to handle the volume" of inquiries, Dudgeon said. "We can get the talking points from L.A., and we can be surrogate connection points for them on their stream. We could log in as them on [the city's] Twitter feed," he added, noting that they were still figuring out how that would work.

Plano, Texas, officials also view social media as a way to work with other jurisdictions and partners.

If another jurisdiction or a college needed to send a message, they could do so through Plano's Twitter feeds, said Hal Grieb, emergency management specialist for Plano. The emergency management division has more than 1,500 followers on its Twitter account, he said. It could be another avenue for other stakeholders to be heard.

Plano is primarily using Facebook and Twitter for disseminating emergency preparedness and prevention information.

"We are working on policies on how to augment our current notification procedures," he said. For instance, the city's social media networks are hooked to National Weather Service feeds, so any alerts or warnings, such as tornado watches, are posted automatically.

The screenshot shows the Facebook profile for the San Francisco Department of Emergency Management (SFDEM). The profile picture features the SFDEM logo and the text "SAN FRANCISCO DEPARTMENT OF EMERGENCY MANAGEMENT Suggest to Friends". The cover photo contains the text: "The San Francisco Department of Emergency Management (DEM) manages disaster preparation, mitigation, and response; administers the EMS System; 9-1-1 dispatch, and homeland security grant distribution for the City and County of San Francisco." Below the cover photo is an "Information" section listing the location (1011 Turk Street, San Francisco, CA, 94102) and phone number ((415) 487-5000). The news feed includes several posts: a post about National Preparedness Month (September) with a link to a ready campaign overview; a post from Carla Jean Johnson stating "Carla Jean Johnson likes this."; a post from Sunday Streets SF: Come play in the streets; and a post from Diane Rivera stating "Diane Rivera Sunset Parkside will have an Information table - Come and join us. We will be on Lincoln Way and La Playa just by".

NEWS FEED: San Francisco's Department of Emergency Management is among the growing number of government organizations using Facebook and other social media channels to provide information, updates and alerts.



2. Emergency Alerts

Social media can also help first responders or security officers capture panic or emergency alerts. For example, a person can notify them about a specific event. Or if a student is being followed by someone on a college campus, he or she could send an alert to campus police, said Guy Miasnik, CEO of AtHoc, a provider of mass-notification systems to government agencies.

Manor, Texas, is testing a platform designed to deliver location-specific alerts to residents during a crisis and allow them to send information back to emergency responders via smart phones.

Manor is partnering with CiviGuard, a provider of emergency communications technology, on a six-month pilot project — slated to end this month — to test and show the usefulness of the system with a select group of residents, said Dustin Haisler, chief information officer for Manor, a growing community located east of Austin.

Many mass-notification systems push volumes of information out to people, which might not be the most effective way to communicate with residents during a disaster. Rather than just disseminating information, CiviGuard will let residents send back information about who they are and where they are located if they need assistance during a crisis or event.

The Red Cross report shows that 74 percent of the people surveyed expect help to arrive within an hour after requesting it via social media. “It gives you some indication that if people are consuming information more and more on mobile and connected devices, it means that they are going to want to express their needs through these channels as well,” said Zubin Wadia, CEO and co-founder of CiviGuard.

What if you could use social media tools and smart phones — a prevalent form of communications now — to reveal your situation and location using two or three clicks of a button, silently if you had to, during a personal emergency? Wadia asked. You could send those messages to family and friends via Facebook and Twitter, and more interestingly, you could send them to public safety answering points, which are basically 911 call centers around the country, he said.

Because the person’s location is then available, dispatchers know where they need to route the call. It’s like a free-form 911 service, Wadia said, because after the message is sent, the hope is that somebody is scanning the waves to pick up on the message. Right now, it’s a hit-or-miss approach, but there are ways to clarify that channel, which is something CiviGuard is trying to solve, Wadia said.



3. The Listening Post

“We have seen that the more advanced emergency operations and security officers are using social media not just as a way to broadcast information but to monitor information,” AtHoc’s Miasnik said.

For instance, a university is part of a bigger community, town or city that has a fire department and emergency response agencies, he said. Many of those emergency response agencies have Twitter or Facebook accounts. Besides sending notifications about situations on campus, university officials can also

monitor some of those tweets and messages via social media channels to know what’s going on.

“So social media becomes not just a means to communicate outbound but a means to monitor and get sources of information from related agencies,” Miasnik said. “They will subscribe in some respects or follow tweets from the fire and police departments or local port to know about things [that are] going on.”

The U.S. Geological Survey is developing a prototype site that monitors Twitter feeds to provide scientists with real-time data about earthquakes. The goal of the Twitter Earthquake Detector effort, launched last year, is to demonstrate a way to rapidly detect earthquakes and provide an initial damage assessment.

TED taps into the Twitter API and searches for keywords such as “earthquake.” It then pulls and aggregates the information, including photographs, to give USGS scientists a map based on the number of tweets coming from a geographic area. That information is



NOSE TO THE GROUND: The U.S. Geological Survey’s Twitter Earthquake Detector searches Twitter for references to earthquakes, gathering information that can fill the gap between when a quake hits and official alerts arrive.

useful because there is a time lag between an earthquake and its official verification.



4. Situational Awareness

Social media technology provides another way for responders to get a better view of emergency situations.

Two years ago, the Virginia Department of Emergency Management (VDEM) launched an emergency management system — the Virginia Interoperability Picture for Emergency Response — that has transformed how it prepares for emergencies and responds to disasters.

VIPER is a geospatial information system-based enterprise platform that integrates with numerous information systems and links with approximately 250 data feeds. It supplies a Web-based common operating picture and numerous analysis tools.

Emergency commanders; first responders; and police, fire and government officials can

tap into a single information resource to gain an accurate understanding of events.

“We wanted something that gave us a good situational awareness picture and, at the same time, expanded the capability of sharing information with emergency partners at the federal, state, nongovernmental and private-partner level,” said Harry Colestock, director of operations at VDEM.

The department deploys Web-enabled widgets within VIPER to query keywords during an emergency, so managers can monitor news reports during an event. Social media gave emergency managers a better sense of a situation in April when rioting erupted during the annual Springfest at James Madison University in Harrisonburg, Va.

VDEM had scant information on the incident, so officials turned to the public affairs department, which monitors social media. They found pictures and video of the event that students had posted on the Web. That gave emergency managers a better idea of what was going on “when we had no other

really good sources of information, and it was very timely,” Colestock said.

“The ability to have these listening posts all over the place is a benefit for situational awareness,” said Gerald Baron, vice president of communications and marketing at Pier Systems, a provider of mass notification and crisis communication systems.

The Homeland Security Department of Austin, Texas, which uses Pier Systems’ platform, turned to social media to get better situational awareness in February when a man crashed his small plane into a building that is home to Internal Revenue Service offices.

The public information officer was at a conference in San Antonio when the event occurred. As she raced to Austin by car, Baron’s team communicated with her by phone to confirm the information she had. They distributed the information to a list of city officials, posted it on the city’s homeland security Web site, and sent information to the media.

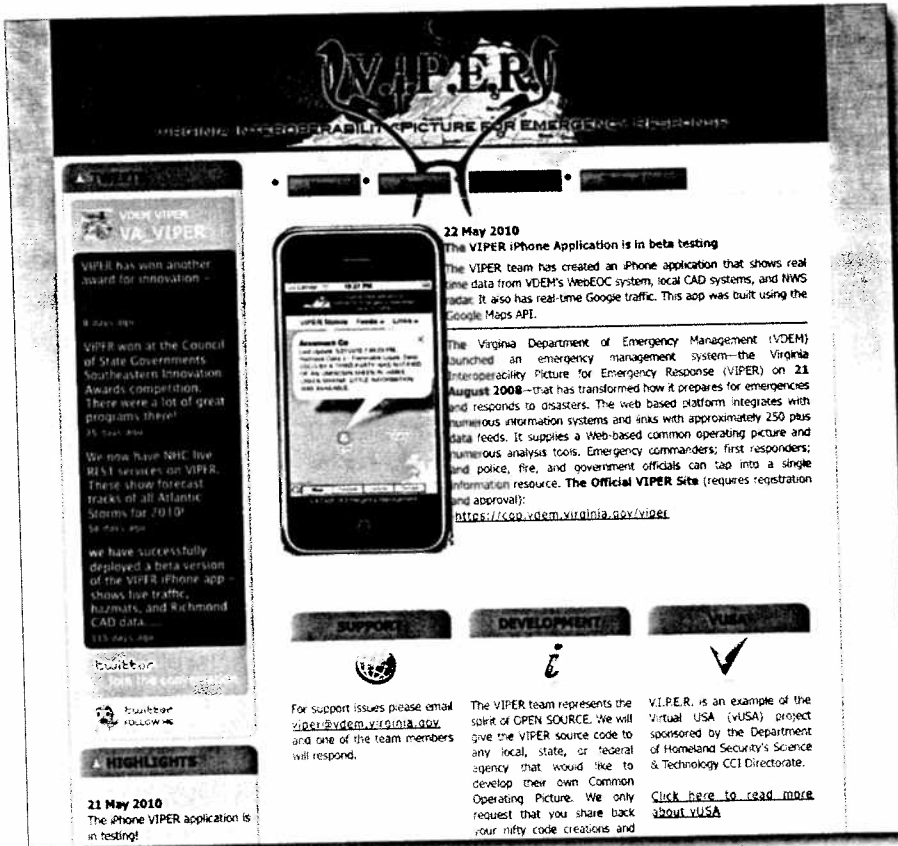
“Not only that, we were able to tell her information going on directly from the scene because we were monitoring social media,” Baron said. The eyewitnesses on the scene were active via Twitter and shared information with other people. Some of the information was evolving faster than even the internal operations people could see, he said.

By monitoring social media, Baron’s team could relay information to the public information officer. “If we had been connected into their operations center or if they were monitoring social media themselves, they could be gathering information from a number of eyewitnesses,” Baron said.

But just as emergency responders can monitor social media to get a better view of a situation, bad guys can do the same.

For example, eyewitness using social media and cell phone cameras posted video on YouTube of the 2008 incident in Mumbai, India, when terrorists launched 10 coordinated shooting and bombing attacks across the city. The police were able to use that information, but bits of video of the special forces team setting up also were posted.

“The bad guys were also looking at the social media as the SWAT teams were setting up. That’s a potential downside to that instant news loop we have now,” said Jose Vazquez, director of first-responder technol-



WIDE NET: The Virginia Department of Emergency Management’s VIPER is a geographic information system platform that links to about 250 data feeds and uses Web-enabled widgets to search for keywords during an emergency.

ogies at the U.S. Homeland Security Department's Science and Technology Directorate.



5. Improved Collaboration

There's no question that social media and Web 2.0 technologies can improve collaboration among defense, civilian and nongovernmental agencies during disasters.

The Southern Command used the Defense Connect Online site and All Partners Access Network to communicate with a range of organizations involved in relief and rescue efforts after the massive Haiti earthquake earlier this year.

Defense Connect Online is a 380,000-user network that lets DOD personnel exchange unclassified and secret information with authorized mission partners. DCO consists of Adobe Acrobat Connect Pro for Web conferencing and Cisco Systems' Jabber chat technology.

APAN is a community of communities Web site that uses wikis, blogs, forums, file sharing and calendaring applications with social networking to facilitate unclassified information sharing with multinational partners, nongovernmental organizations, and various federal and state agencies.

The challenge is how to "balance security and who is allowed to use these networks against the need of sharing information," said Air Force Col. Brian Hermann, chief of the Defense Information Systems Agency's Net-Centric Enterprise Collaboration Services.

During the Haiti relief effort, there was a fully functioning hospital that didn't have any patients. That information was posted on an APAN blog, and the next day, the hospital reached capacity. "In those situations, we want to share as much information as possible because there isn't the same kind of need to classify information," Hermann said.

Social media lets organizations communicate their needs during an emergency, allowing mission partners to see what those immediate needs are and respond to them fairly quickly. It provides a flatter, less hierarchical approach for information sharing, Hermann noted.

DOD is working to standardize on proto-

cols such as the Extensible Messaging and Presence Protocol, an Extensible Markup Language secure chat protocol that will allow DOD to securely communicate with other mission partners inside and outside government.

To address the problem of information overload and credibility, DOD is testing a program called Chat Surfer that is designed to let users set keywords and then search through all chat rooms devoted to a selection of services, Hermann said. For example, the system would alert a user if the word "Haiti," or other keywords or locations, came up.

"You can get overloaded with information and never be in the 20 different chat rooms, but this tool would let you aggregate that content and just notify you for things that are of an interest to you," Hermann said.

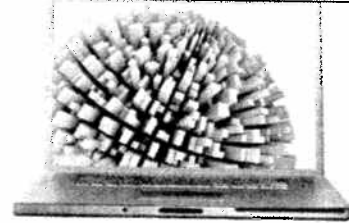
Emergency responders also are using social media to share best practices across the many emergency management disciplines via the DHS First Responders Communities of Practice. The online network consists of vetted, active and retired first responders; emergency response professionals; and federal, state, local or tribal DHS officials. The network is sponsored by DHS' Science and Technology Directorate's First Responder Technologies program.

The Make America Safer through Social Media community, led by Hal Grieb of Plano, is collecting the best practices of the different social media tools available, DHS' Vazquez said.

Members of the network can engage in specific forums, contribute to blogs and wikis, post documents, share calendars, and bookmark content from the Internet. Members also have profiles that give details about their accreditations, association memberships, credentials, training, and areas of interest related to job activities, such as social media.

"They have a level of trust that we, the government, can verify that the people there are also first responders and have a need to know information" related to emergency management, Vazquez said.

"In many ways, it gives [first responders] a social collaboration tool similar to Facebook and LinkedIn," he said, "but the difference is that this is a controlled environment." ■



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