First Responders Experiment with Social Media in Disaster Response

David Raths | July 23, 2015

Last November the emergency management team in Nashua, N.H., participated in a cross-border disaster preparedness exercise with Canadian agencies to evaluate how digital volunteers and social media can be incorporated in the official emergency response to address alerts, warnings and notifications as well as mutual aid.

A short time later, over Thanksgiving weekend, a powerful nor’easter hit New Hampshire, causing multiple accidents and power outages. “We ended up using skills learned during the exercise right away,” said Justin Kates, Nashua’s director of emergency management. “Through social media posts, our digital volunteers were tracking roads that were closed and compiling that info onto GIS maps to help first responders direct resources, clear trees from roads and restore power.”

Public information officers (PIOs) have used social media to share information with the public about disasters for years. But emergency management agencies are beginning to work on how to incorporate social media into operations to improve situational awareness for responders. And including social media in exercises is one way they’re building capacity and relationships, while also identifying best practices.
Beyond the EOC
The exercise Nashua took part in was called CAUSE III, the result of collaboration between Defence Research and Development Canada’s Centre for Security Science, Public Safety Canada and the U.S. Department of Homeland Security Science and Technology Directorate, in partnership with various provincial, municipal and nongovernmental organizations. The experiment focused on integrating social media and digital volunteers into recovery efforts from a simulated hurricane impacting the Northeast.

A closed, Web-based experiment portal simulating social media applications like Facebook, Twitter and YouTube was used to deliver a high volume of pregenerated injects to prompt participant reactions and enable participants to interact with one another in a risk-free environment. Five hundred people participated by logging into the experiment’s simulation Web portal.

As the experiment unfolded, participants coordinated actions and resources, addressed rumors and misinformation, and carried out other disaster management strategies in real time in response to the evolving conditions.

Kates said Nashua participated because it was trying to take its social media use to the next level. “In the past when we’d open the EOC, we’d have one person sit there and handle social media using TweetDeck. It was very basic,” he recalled. “We were trying to figure out how we could capitalize on the skills of our Community Emergency Response Team volunteers who were tech-savvy and knew how to handle that Web 2.0 environment and use them remotely so they don’t have to come to the EOC.”

Volunteers can sort through social media posts and alert agencies to information that’s important for responders to know. That group has become Nashua’s Virtual Operations Support Team (VOST), and the Thanksgiving event was its first real test.

The Centre for Security Science at Defence Research and Development Canada issued a report summarizing the results of CAUSE III. “We were able to demonstrate in a measurable way that using social media and digital volunteers leads to improved recovery outcomes,” said research analyst Kate Kaminska. “We spent a lot of time developing metrics that helped us quantify some of the benefits of using the technology and reaching into nontraditional stakeholder communities to help during response and recovery.”

Kaminska described some of the advantages of creating a closed mock social media environment: “Although you can’t easily simulate the volume of information that flows in a real emergency, the benefits are huge. The closed environment gives people a level of comfort. They don’t feel like they are being watched or judged.”

The other benefit is having controlled conditions in an experiment. It may be slightly artificial, but agencies can measure different aspects much more easily.

Doing such exercises with digital volunteers is important, Kaminska said, because emergency management organizations must build relationships ahead of an emergency. “You are not going to reach out to a VOST or other volunteer organization
in the middle of a crisis,” she said. “You have to have that relationship established ahead of time, and exercises like CAUSE are one way of building those and building trust. We saw these VOSTs really step up to the plate. They really delivered what they had promised.”

**Behind the Curve**

One finding of the research report was that while digital volunteer groups were seen as a great resource, the participants, “Also saw a pressing need to develop their own capacity and capability to exploit the potential of networked technology and social media for emergency management by listening to, influencing and engaging other stakeholders and the public as resources and partners in disaster response and recovery.”

Dan Cotter, director of the Office of Interoperability and Compatibility for DHS’ Science and Technology Directorate, said a few factors have kept emergency management agencies a little behind the curve on social media at times. There are privacy issues related to sensitive information on social platforms that must be worked through, he said, and there are many different formats and types of data being disseminated. “How do we keep track of it all?” he asked.

“With exercises like CAUSE III, we are learning about VOSTs and understanding requirements VOSTs are expected to support,” Cotter said. “We need to make sure we have consistent training and guidance within VOSTs’ membership, and we want to make sure there is a strong culture of collaboration between the VOSTs and emergency management agencies.”

Cat Graham is co-founder and vice president of Humanity Road, a nonprofit that provides social media disaster preparedness and response information during events and participates in training exercises worldwide. (It was one of the organizations taking part in CAUSE III.) She said many emergency managers recognize the power of social media but say they don’t have enough resources to capitalize on it. “Everybody agrees it’s useful,” said Graham, “but we are still early in this development phase of the adoption of social media and understanding how to use it effectively in an emergency.”

One valuable aspect of including social media in disaster preparedness exercises is the opportunity for emergency managers to understand how to follow the crowd. “Social media is a dialog,” Graham said, “and the key thing about an exercise is that it not only teaches emergency management what is possible with social media, it also teaches them a good way of listening, following and responding to that crowd.”

Humanity Road takes lessons learned from live emergency monitoring of disasters and feeds them back into future exercises. “That is why we like working with events like CAUSE III,” Graham said, “because social media exercises provide a way to feed real-life examples back into practice to figure out when we have this kind of situation, what are we going to do?”

Sara Estes Cohen, a project manager for consulting firm GHI International, works with the DHS’ Virtual Social Media Working Group providing guidance to the emergency
preparedness and response communities on the safe, sustainable use of social media technologies.

“One of the things we did for the CAUSE III experiment was to develop a data schema to help standardize information coming in from social media so it could better fit with information coming in from traditional sources,” she said.

Cohen has recently been working with emergency management officials in Louisiana on how to integrate social media into operations and into the state’s annual hurricane preparedness exercise. “The first thing we did was sit down with the team and discuss their information requirements, how they interact with social media now, what are they doing with it, where is it coming from, and who they are giving it to.”

My Eyes and Ears

Kevin Breaux, assistant deputy director for preparedness, response and interoperability in the Louisiana Governor’s Office of Homeland Security and Emergency Preparedness, calls the nine regional coordinators across the state his eyes and ears. “If I incorporate social media, I’ve just multiplied my force by 100. That’s the direction we need to go.”

Breaux said the state has discussed incorporating VOSTs into its annual hurricane exercise. The exercise could help show senior executives that social media is going to be something the state can depend on, in addition to the information and capabilities it already has. “We also would like to send out specific questions through our public information office about what people are seeing and collect the responses in Google Docs,” he said. “Then during a real event, if we have 100 people on social media saying there is a flooded mall and they are sending photos, we can send a confirmation team to act on that.”

Social media can play a critical role in showing citizens that the state is incorporating what they are doing in its decision-making processes, and that it understands they are a vital resource, Breaux said.

Nashua’s Kates said that although his emergency management agency is active on social media, there are other departments in the municipality that aren’t, and their presence on the platforms would be helpful during an event. “If you are not telling your story on social media, someone else is telling it for you,” he said. “With every storm, more and more citizens are reaching out to us using social media. Sometimes that’s one of the only ways they can reach us. Their cellphone is charged, and they put a post on Facebook.”

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But once an event occurs, all of a sudden, the power company is using social media to track what people are saying about outages compared to official reports. Public works leverages information about where fire hydrants are damaged, and its value becomes clear. “You can then see the adoption of social media spread from the PIO, where it started when social media became a thing, out into operations, into the rest of the EOC,” she said. “That happens every year as technology advances and as events occur.”

This story was originally published by Emergency Management.