Every dot in a storm

Crisis mapping guided responders in Haiti. It could back up 911 systems here

BY CAROL WATERS

As hundreds of trees fell across Long Island last weekend and tens of thousands of homes lost power, Nassau County’s 911 system proved to be no match for a powerful nor’easter.

Compare the technological response here with that after the utterly devastating earthquake in Haiti in January. Within two hours of the quake, a rapid-reporting system swung into action to help Haitians communicate their needs to the outside world and responders assist them on the ground.

This system provided precise GPS coordinates of Haitians in peril, descriptions of their needs and, in most cases, direct contact information so responders could let victims know they were on their way. It proved to be one of the most effective and resilient sources for timely, accurate crisis information for responders in the field, and the data came from the Haitians themselves.

The platform was not headquartered in Haiti, nor was it funded or staffed by the United Nations or the United States or Haitian governments. Instead, it was an innovative open-source tech platform, called Ushahidi, headquartered in Haiti at Tufts University.

Ushahidi-Haiti’s success, humanitarian responders are starting to understand how mapping and communicating crisis needs in real time using open-source systems — called crisis mapping — can be beneficial. But a system like Ushahidi, which was initially designed to report on international humanitarian crises, can also be used to complement domestic response systems in the United States.

The overwhelming of Nassau’s 911 system last weekend provides a context for how crisis mapping and using disaster-resilient data networks could complement municipal, county and state disaster response systems.

The 911 call center received about 10,000 calls last Saturday — far more than its daily average of 2,200. Delays resulted, and calls had to be rerouted to Suffolk County and Albany to keep up with the volume. The local emergency radio system also went down briefly, and had there been a longer silence, emergency responders wouldn’t have been able to communicate with each other.

The experience should be a cautionary one, particularly with hurricane season right around the corner.

Officials have responded with the promise to build more call center stations, explaining that they didn’t lack trained staff, just centralized work places for them. That’s not a bad start, but it doesn’t speak to several much larger issues that can be addressed more effectively by revisiting how we communicate with disaster-affected populations.

Communications systems in a crisis should have built-in redundancy. If one system goes down or becomes overwhelmed, another exists to back it up. Although properly deployed 911 systems are resilient, they are still based on voice networks, which are inherently more fragile than data networks in a disaster. So local governments should develop complementary systems that use text messages and the Internet to communicate in times of disaster.

The comparative reliance of data networks is illustrated by the experience of top officials in New Orleans in the wake of Hurricane Katrina in 2005. With cell towers and land lines knocked out by the storm and floods — and batteries in satellite phones and radios dead and dying — officials holed up at the Hyatt hotel became dependent on a Vonage phone account that ran over the data networks and remained operational when all other communications systems had failed.

For the critical first five days after the hurricane, this allowed the team to establish essential lines of communication with the outside world — it was via the Internet that Air Force One first made contact with officials in New Orleans after the disaster.

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