

Crisis Informatics

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As the world turned to CNN last April to watch the unfolding of the harrowing events at Virginia Tech, a tidal wave of information seekers turned to new and ubiquitous methods of getting more than traditional media can ever hope. Like tens of thousands of others around the world, Michael Byrne, co-author of this article, and his family logged on to Facebook.com to check on a friend who attended Tech, only to discover she had 400 unanswered messages, an early indication of her murder that day.

How do we keep up with these incredibly powerful new ways to communicate? What are the implications for public safety and emergency managers as they grapple to make sense of these undisciplined, unorganized and unverifiable information streams?

Communications Behavior After a Disaster

People are turning to their Internet connection to broadcast their welfare and check on others. In fact, that trend is the subject of studies at the connectivIT Lab and the Natural Hazards Center at the University of Colorado at Boulder. Researchers there have coined the term “crisis informatics” to describe the communications behavior of individuals after a disaster. In a recent publication, researchers published their findings from a study of the mass shootings at Virginia Tech. With a population of more than 30,000 students raised in the era of the Internet, the school is the ideal setting to observe how people can use these new methods during a crisis.

On Apr. 16, 2007, it is safe to say that nearly every Virginia Tech student with an account turned to Facebook.com for information. Not more than 30 minutes after the

shooting stopped, even rescue personnel started to receive text messages, e-mails – and yes, Facebook messages inquiring about their welfare.

If watching the television news reports was described as “passive listening” and logging on to Internet news sources to search for the news was described as “active listening,” then the only way to describe the online communities is “aggressive listening.” Groups were formed, blogs were written, messages were posted in forums, and the process of collaborative information gathering and sharing was underway.

A Major Paradigm Shift

This is a major paradigm shift in how we experience news of a disaster. Anyone with an Internet connection suddenly has the ability to gather and distribute information. This source of information might be thought to be rife with inaccuracy, but it isn't. Like the self-published Wikipedia articles published about the shooting just hours after the last shot was fired, this collaborative effort has very accurate results. According to the researchers at the University of Colorado, online efforts correctly identified all of the deceased victims *before* the university released that information.

Make no mistake, this is no trendy theory; it is actually happening. Affected by disaster, people turn to Web-based situational awareness tools such as the Facebook.com group, “I'm OK at VT.” The group was started by Facebook users, and members were able to post their own personal situation report. These groups also are supporting action-oriented efforts. At Virginia Tech, groups appeared to coordinate support and recovery functions.

Perhaps most interestingly, though, is that the online community is using their medium to post opinions of the decisions being made by administrators and emergency managers – and they're doing it in real time. Imagine making a decision in your emergency operations center and knowing that literally minutes after you've done so, you can see how the community is reacting to that decision. In the case of the Virginia Tech shootings, groups such as “We support [Police] Chief Flinchum” formed to show solidarity, while other groups called for the resignation of several university officials. Feedback that once took days to report now takes only minutes.

Effective emergency management relies on timely and accurate information. Faced with this rapidly evolving source of information, our community must ask how we can effectively harness and utilize that information. On Apr. 16, the EMS operations center saw a fusion of the “Facebook generation” with emergency management operations. Since the Virginia Tech Rescue Squad is run entirely by students, information was constantly flowing into the operations center from cyber-sources everywhere.

The Future Is Here

No one can say for sure exactly what role this type of information has played or will play in future emergencies, but one thing is for certain: it's a valued resource and we must determine how to leverage it. Imagine a command post with access to a more abundant and timely source of information than can even be broadcast on national news. This is not a picture of the command post of the future – it's already here.