Resiliency of Society:

How Citizens, Mobile Devices, and Social Media Can Change Crisis Response

Resiliency of Society:

How Citizens, Mobile Devices, and Social Media Can Change Crisis Response

When ordinary people find themselves in the midst of a crisis, how do they react? Many assume that individuals will flee from an emergency situation…but the reality is that panic is not a common reaction.

Reactions to a crisis vary by individual, and in many cases, are highly nuanced. Some people engage. Some people observe. Some people inform. Many people stay calm, cool, and collected in an emergency, and become more focused and ignore trivial issues. Through their reactions, these people can play important roles in the lifecycle of emergencies.

A common driver of individual action during a crisis is "information hunger" – people look for information during a crisis and want to know exactly what's going on. For instance, recent data indicates that when a fire alarm sounds, many people will spend time searching for information rather than immediately evacuating the building.[1] This is known as the "Fire Evacuation Myth" – the idea that people will respond automatically based on the stimulus of a fire alarm.

This need for information in the face of danger is a fairly consistent response across many different types of emergencies. Often, this need for information is related to the need to help – the resiliency of society and the willingness to provide aid or assistance in the face of danger. Some of the greatest frustrations for witnesses of a crisis come from a feeling of helplessness, rather than the perceived risk to health and safety.

This willingness to help, if harnessed correctly, can make citizen witnesses a valuable resource, and help keep them out of harm's way. By leveraging existing technology, organizations can tap into the natural tendencies of individuals in an emergency, allowing ordinary citizens to provide valuable insight, and change the face of emergency response.

---

[1] Gantt, Paul and Ron Gantt. "Disaster Psychology: Dispelling the Myths of Panic." American Society of Safety Engineers: Aug. 2012: www.asse.org. 15 Oct. 2013.

Citizens on the Scene – and Their Role in Crisis Response

The idea that a citizen engaged in an incident can aid crisis response is a relatively new perspective. But when leveraged correctly, ordinary citizens can become a resource: a resource for information, a resource for action, a resource for feedback, and a resource for surveillance.

Research since 9/11 shows that when alerted to a crisis, many people remain surprisingly calm. They seek information, and they want to provide information to others – most of all, they want to help.

Consider three recent examples of citizen involvement in an emergency:

Shooting of U.S. Representative Gabrielle Giffords

Daniel Hernandez had been U.S. Rep. Gabrielle Giffords' intern for five days when she was shot at an event outside Tucson. The junior at the University of Arizona was helping check people in at the "Congress on Your Corner" event when he heard gunfire. He was about 30 feet from the congresswoman. When the shots began, he ran toward them. Hernandez rushed to Giffords' side and applied pressure to her head wound and held her in his lap until paramedics arrived. "I don't even know if the gunfire had stopped," he said as he kept a vigil at the University Medical Center cafeteria, gathered near a TV watching tributes and getting updates.[2]

Bombings at the Boston Marathon

Stan Ricks, who finished running the marathon only minutes before the first bomb went off, described the heroics of both first responders and marathon volunteers. He was in the medical tent when he heard the explosions and quickly left to make room for those injured in the blasts. "As we're all trying to get away...the police are running and charging down the street to help," Ricks said. "And a lot of the volunteers went to help. It was truly amazing to see. These guys were really heroes. I was totally impressed."[3]

---

[2] Rose, Jaimee and Pitzl, Mary Jo. "Daniel Hernandez, intern, stays by Gabrielle Giffords' side." AZ Central, 9 Jan 2011. http://www.azcentral.com/news/articles/2011/01/09/20110109daniel-hernandez-gabrielle-giffords-arizona-shooting.html#ixzz2lgOyDCOF. 21 Nov 2013.

[3] Stump, Scott. "Witness who ran toward marathon bomb 'saw bodies flying.'" TODAY, 16 April 2013. http://www.today.com/news/witness-who-ran-toward-marathon-bomb-saw-bodies-flying-1C9364930. 21 Nov 2013.

Salon Meritage Mass Shooting

On the afternoon of Oct. 12, 2011, Doug Childers and his fellow contractors were outside, some just finishing lunch, when they heard the gunfire. They ran *toward* the shots. As Childers approached the building near Pacific Coast Highway and Fifth Street, he saw a man later identified as Scott Dekraai step out of Salon Meritage. The man walked calmly, carrying what appeared to be a gun. He pointed the gun at Childers, but then kept walking. "I was in a reactionary mode. I didn't stop." Childers was the first responder to walk inside the salon.[4]

In each of these three examples, citizens ran towards an event, instead of away from it, due to an overwhelming desire to help, despite the obvious danger. Certainly, the intent of any organization is not to put citizens at risk – but is there a way to keep people safe, and also to leverage their natural tendencies to become part of managing an event? Is there a way to harness what **they're already doing** to help improve response to a crisis?

To answer this question, we need to understand another nuance of societal resiliency – the desire to gather and share information. On-the-scene information can be incredibly important to acting on a crisis management strategy, and can guide the mobilization of responder resources. So who are the first eyes and ears on-the-ground for an event? Our first thought may be of news reporters. But often, news reporters are not actually the first on scene – as they only hear about an event after it occurs. First on scene are generally ordinary citizens, who just happen to be in the vicinity as the event happens.

How Can Regular Citizens Be Your Eyes and Ears On the Scene?

In the past, organizations learned about an event through traditional methods – notifications from law enforcement, news media, and manual call trees to seek information from contacts in an impacted area. But in a modern, digital world, how do we learn about a crisis? Interestingly, social media has become an efficient, real-time news source used by organizations around the globe. Organizations that realize the value of social media can use it to gain insight about a crisis as it is happening.

---

[4] Gangwer, Sam, "Nearby workers ran toward Seal Beach gunshots." The Orange County Register, 4 Nov 2011. http://www.ocregister.com/articles/childers-325430-salon-police.html. 21 Nov 2013.

In many cases, even images on the evening news are being sourced from social media. On-the-scene citizens can provide accurate, timely information about an incident much faster than sending a news crew to the site. And in many cases, these citizens are **proactively** sharing information, with the help of mobile technology that allows the uploading of text, images, and videos to social media outlets.

Consider how information was shared via social media during two recent events. On Oct. 1, 2013, Jacksonville International Airport was temporarily closed and evacuated due to a bomb scare. The airport was evacuated after two suspicious packages were found on site. The Jacksonville Sheriff's Office bomb squad removed the packages and completed an in-depth search of the airport before reopening it.[5]

Many people at the airport were put on buses and taken to nearby hotels shortly after the evacuation. Meanwhile, others were stranded at gates or in planes waiting to take off. Passengers used Twitter to share images and confirm safety during the bomb scare. Airport officials also used Twitter to provide frequent updates about the incident, alerting people about the airport closure and evacuation until they resumed regular operations.

In July of that same year, an Asiana Airlines plane crashed at San Francisco International Airport, resulting in two deaths and more than 70 injuries. Flight delays ensued as medical personnel, police officers, and various airport officials provided on-the-scene support. Passengers waiting on nearby planes shared details about the incident from the tarmac, sharing some of the most widely-seen images of the event on Twitter. These images were picked up and shared through mainstream media.[6]

Social media increases the quantity of information. Twitter, Facebook, Wikis, and other information sources allow citizens to share critical information quickly and efficiently. Geo-location features of the sites allow the pinpointing of developing events and impacted groups.

---

[5] "Jacksonville International Airport reopens; device rendered safe." News 4 Jax: Oct. 1, 2013: www.news4jax.com. 15 Oct. 2013.

[6] Rokhy, Ron. "Twitter Abuzz After San Francisco Plane Crash Kills 2, Injures 70." 6 July 2013: NBC Los Angeles: www.nbclosangeles.com. 16 Oct. 2013.

The Challenge of Social Media and Citizen Reporting

Unfortunately, an increase in quantity does not always translate to an increase in quality. In September of 2013, a civilian contractor and military veteran went on a shooting rampage at a U.S. Navy civilian complex, killing himself and 12 others. Many news outlets provided updates on Twitter as more details about the incident became available throughout the day. However, one of the most widely circulated Twitter images was a photo that depicted a man on the ground near the Navy Yard surrounded by medical personnel.[7] The photo, which was shared via Twitter and included the hashtag "#NavyYardShooting," was retweeted by hundreds of Twitter users and various media outlets, but no one initially confirmed the information source was credible.

At the same time, the sheer volume of shared information during high-profile events makes it difficult to verify each source. During Hurricane Sandy, over 20 million tweets featuring the hashtags "hurricane," "#sandy," and "#hurricane" were posted, as citizens offered information about gas availability, power outages, road closures, and other storm-related events. Ten Sandy-related images per second were uploaded to Instagram, and thousands of videos were shared on YouTube.

Social media is a valuable input for intelligence in a crisis, but only if it is harnessed correctly. Due to the sheer volume of information, social media needs to be filtered properly for organizations to use it to provide accurate, time-sensitive updates during a crisis. Like solar energy, citizen-generated information is useful only if it can be harnessed.

Filter and Analyze Large Volumes of Incoming Information

To effectively leverage the large volumes of citizen-generated social media content, organizations need a method to capture, filter, and analyze this information resource – quickly. In the case of Twitter, for example, you need a technology infrastructure that can identify anomalies in the information feed. This could be a higher than normal volume of tweets for certain keywords or certain hashtags, which could be cross-referenced with a particular geographic area. An increase in volume could indicate a developing situation or an event occurrence.

---

[7] Levenson, Eric. "The Story of the Viral Navy Yard Shooting Photo." 17 Sept. 2013: The Atlantic Wire: www.theatlanticwire.com. 15 Oct. 2013.

As an example, an organization could monitor for a threshold of 5% or more tweets including the hashtag "tornado" that also contain the hashtag "touchdown." Visualization of tweets including these terms can identify clusters, which can be geographic in nature, showing a trail or a path of a particular event that's moving toward a particular location. These clusters can also identify a volume of people in one particular location discussing a topic – which, when related to a flagged term, can prompt closer investigation.

Flagging changes in the pattern of posted content is only one part of the equation – organizations also need to analyze this information in order to act on it. But through automatic monitoring based on particular keywords and hashtags, organizations can cut down on the sheer volume of content that needs to be verified.

Leverage a Variety of Sources

In order to better qualify information gained through social media, organizations should have a method of gathering information from a variety of sources. In addition to social media, organizations should provide a method of receiving information from their personal communities – including customers, residents, or employees. While this information may not be available in as large a volume as social media inputs, it is certainly more credible, as the result of a much more direct relationship with these communities. By providing your contacts a way to reach you directly with information about emergencies or incidents, you not only create a direct feed of on-the-scene information, you create trust and solidify your relationship with these individuals.

Engage in Two-Way Communication

When dealing with either the public community of social media, or the more private community of your own contact base, engage in two-way communication. This allows you to gather more information, direct resources to where they can do the most good, and direct contacts to resources that they need. This can be done by engaging social media contacts to ask follow-up questions, or ensuring that your notification technology supports incoming messages or polling responses from your personal contacts. For example, in the case of a storm, the ability to receive images from the scene of an incident, like images of a fallen tree, and ask follow-up questions, can then allow you to direct resources to the appropriate location, and show people what to avoid. This two-way capability allows you to gather, as quickly as possible, all the factual information about where particular issues might be happening.

The Value of Resilient Citizens

Resiliency, in general, takes many forms. There are citizens who will run towards the frontlines, and people who will be willing to help first responders. The key is to leverage the tendency of these citizens to gather as much information as possible, to best guide organizational response. In order to do this effectively, you need the appropriate tools to receive and filter this enormous amount of information, and deliver critical updates in as timely a manner as possible.

The timeliness of citizen information, reported from the scene, is crucial in event response – and in prevention. Every event has a lifecycle – accurate, up-to-date information is critical during a crisis, but it also is important in preventing a crisis. With effective communication methods and tools, organizations can leverage the resiliency of citizens to create situational intelligence, or a true picture of an event as it develops.

No two people are the same, but many share the desire to help in a crisis. By providing an outlet to do so – by contributing information through social media, or through a direct line to responding organizations, we allow citizens to become a part of crisis response.

Finally, in order to effectively use incoming citizen information, organizations need to have methods of receiving, filtering, and qualifying large volumes of available content, including a system and process in place to quantify and analyze it.

Through their resiliency, regular citizens can help organizations improve incident response, reduce incident severity, and prevent crises before they escalate. With the right tools for harnessing the natural tendencies of everyday citizens affected by a crisis, everyone becomes part of the solution.

About Everbridge

Everbridge provides industry-leading interactive communication and mass notification solutions to organizations in all major industries and government sectors.

Communication failures have historically plagued organizations in their ability to respond to and minimize the human, operational, and financial impact of critical events and emergency incidents. Everbridge began with a shared vision: empowering a single person to communicate with any number of people as easily as communicating with one person to save lives, protect assets, minimize loss, and ensure continuity of operations. Everbridge brings technology and expertise together at every level for a complete solution. Everbridge solutions match your unique needs, from safety and survival during a crisis to cutting costs and achieving efficiencies in your everyday operations. Our understanding of mass notification and interactive communication challenges is leveraged in everything we do, from how we build our technology from the ground up to the expertise of the people we hire and best practices we share with the community.

We design the Everbridge system according to several key tenets:

- **Target the individual** – not the device. Everbridge has the most comprehensive notification system available, offering more than 30 contact paths that can be designated by incident type or by escalation steps.

- **Ease-of-use during any situation** – emergency or daily use – so even a non-technical person can communicate effortlessly and without anxiety.

- **Speed and reliability of communications.** Every second counts in an emergency. With global datacenters and an infrastructure unparalleled in security and reliability, the Everbridge mass notification system is designed for rapid and efficient communications worldwide so your message will always go through.

- **Universal accessibility** – with a fully managed system requiring no hardware, no software, no maintenance, and a flexible pay-as-you-grow model, organizations large and small have access to the same powerful communication capabilities.

- **Scalability** – the Everbridge mass notification system provides the ultimate flexibility in communication capabilities to meet changing needs in today's dynamic environment. The Everbridge system is inherently scalable to grow with and adjust to the requirements of any organization quickly and without disruption to internal processes, infrastructure, or resources.

Visit www.everbridge.com to learn more.