The ENS Evolution
How Social and Mobile Changed Emergencies

The ENS Evolution: How Social and Mobile Changed Emergencies

Executive Summary

Over the course of the past decade, the emergency notification industry has undergone many changes as a result of technological advances. Every year, emergency notification systems (ENS) have become more advanced, more reliable and more capable of communicating critical information to those who needed it most. At one time, using 911/public directories for contacting citizens was once awed; when multiple contact paths like fax, email, mobile devices and SMS were added, people felt more assured that they could reach their intended recipient than ever before; and then GIS notifications added an even finer dimension to targeting the right individual at the right time with the right message.

With rapidly evolving technologies, and more importantly, the quick adoption of these technologies by the general populous, the emergency notification industry needs to take advantage of key advancements in cloud technology, big data, mobility and social media in order to be most effective at processing and communicating critical information that can protect life and property.

In fact, the advent of these technologies has not only completely evolved what was once an industry focused on making a phone ring, they have also dramatically changed the communications' expectations of its recipients. The next phase in the evolution of the industry is now situational intelligence: the ability to automate the monitoring of external data sources like Twitter, as well as empower recipients with mobile apps that allow them to proactively communicate on the scene visual data to administrators.

Today's ENS solutions should surpass legacy emergency notification systems in four main areas:

Insight and Intelligence: Emergency notification was primarily a one-way conversation. Administrators would broadcast the notification and at most would receive a number of confirmed receipts in return. Today, ENS systems, on the other hand, should allow for a full-featured closed-loop communication strategy that facilitates two-way communications between recipient and administrator. With an increasingly connected populous, recipients are turned into eyes and ears on the scene, with the ability to send messages

and rich media like photos and videos back to administrators. This information, combined with the insights available publicly on social media outlets and third party news feeds, creates a much more comprehensive representation of any incident and greatly increase the level of situational intelligence.

Social Media: The vast amount of information available through social media outlets provides an enormous opportunity to greatly increase situational intelligence. Unfortunately, there is a lot of "noise" on social media and advanced capabilities are needed to filter through the volume of data in order to extract the desired information. According to a recent Everbridge study, 58% of organizations do not have a social media plan for crises. Moving forward, that number will gradually continue to decrease as organizations adopt ENS systems that allow them to develop social media plans for both inbound and outbound communications.

Global Capabilities: It is no secret that the world is evolving into a global economy and community. For organizations that operate internationally, managing mass communication between multiple countries can be difficult. Globally local capabilities in modern ENS systems allow organizations to operate a single unified mass communication platform, with all the benefits of operating locally out of each individual country. With advanced features like localized short codes for SMS, call origins matching their destination, and data storage decoupled from system processes, it greatly increases the efficiency and effectiveness of the communications.

Mobility: While some emergency notification systems had limited mobile broadcast capabilities, they were simplified forms that allowed only the most basic functionality for administrators operating on mobile devices. With modern ENS systems, mobile devices are served a native, full-featured solution that allow instant creation of custom broadcasts, full featured GIS mapping, sending to groups or individuals, scenario-based broadcasts and all the other advanced features they would expect from their platform.

Reliability: With advances in cloud computing, modern mass communication systems are able to scale their dynamic infrastructures to meet the volume requirements of their users *in real time*. This means that the system will respond and deliver communications as expected, no matter what size event is occurring, whether local, regional or global in scale. Legacy emergency notification systems have technological limitations that create bottlenecks and slow delivery or failure situations during large-scale crises.

Accessibility: Modern ENS systems have the ability to connect with recipients in a more ways than a land-line phone call or email-based text message as many legacy emergency notification systems are limited to. With the latest systems recipients can opt-

in through various contact paths such as mobile phone, SMS, pager, email, push notification, land line and even social media accounts. Additionally, users can input preferences that allow the system to know *how* they want to be contacted in *what* circumstances they stipulate. This means they are receiving broadcasts in the way that works best for them, increasing successful delivery and dissemination of information. This is especially important as the general population has come to demand instant notification of news and critical information.

Insight and Intelligence

Mobile devices such as smart phones and tablets not only increase the efficiency at which individuals can receive messages, but greatly increase their capacity to share and send valuable information as well. Whether it is through public forums such as social networks, or through a dedicated member application, individuals seemed compelled to share the details of their daily experiences. In the case of an emergency, their experiences could provide valuable insight and situational intelligence for those managing the response to that incident.

There are incidents in which harnessing the information social media can provide would greatly improve situational intelligence in an unexpected incident. The University of Colorado Hospital recently experienced an unexpected surge of visitors, crowding emergency rooms and reception areas, complete with local news helicopters hovering the sky. Unfortunately for hospital officials, they had no idea why their hospital had just become so crowded with people who seemed not to need any urgent care. If they had been properly monitoring social media and filtering the data, they would have seen hours in advance the rumors circulating that a celebrity was going to make an appearance to visit the victims of the movie theater shooting days before.

When harnessed correctly, the power of social media and third party data sources such as weather and news feeds can provide great benefits. One county in Washington State recently realized the benefits of situational intelligence during a forest fire, which affected thousands of people. They were able to obtain images and status updates in real time from citizens on the ground that shared the information and media on social networks. Additionally, they had a mass communication system in place with a trained user base so they were able to communicate effectively and efficiently across the entire lifecycle of the emergency.

While administrators and organization leaders cannot be everywhere at every time, the public are becoming eyes and ears at the scene and have already begun to voluntarily

share valuable information in a public forum (social networks). While this presents a great opportunity, social networks are noisy with a great amount of data that is not useful as well, so it is critical to know how to filter the data you need from the noise in the background.

With the sheer volume of participants sharing information social networks, a massive amount of raw data or information is publicly available. Combined with real-time severe weather feeds, news feeds and organizational data feeds, the sheer amount of data available is staggering. The weather, news and social media feeds can be visually combined over a GIS mapping solution to provide real time situational intelligence that will assist responders in making better decisions when responding to incidents or emergencies.

Social Media

The vast amount of information available on social media websites provides the opportunity to greatly increase situational intelligence. People expect immediate notification of news and events on social outlets, and often post updates themselves in the form of rich media like photos and video. In many incidents during the past year, breaking news has spread across social networks before any other major communication pathway. Social media is certainly a valuable tool that can be harnessed to great benefit for insight and intelligence. With all this valuable, timely information readily available on public mediums, it is shocking that the public has not demanded it be as readily available for emergency systems like ENS.

Unfortunately, there is often too much information on social media and it requires advanced capabilities to filter through the volume of data to extract the critical information. Organizations using modern ENS systems, however, should have the capability to filter through the noise to obtain the information that is relevant to them. Whether sorting by keywords, hashtags, or setting thresholds and alerts for engagement activities: monitoring social media for valuable information can be automated to increase situational intelligence when it matters most.

According to an Everbridge study, over 2/3rds of organizations knew the potential value in social media as both an output and input, however 58% of organizations do not have a social media plan for crises. Moving forward, that number will gradually continue to decrease as organizations adopt ENS systems that allow them to develop social media plans for inbound and outbound communications.

Global Capabilities

The world is evolving into a global economy and community. For organizations that operate across multiple countries it is difficult to manage mass communication. With differences in country codes, texting protocols, and extremely strict regulations regarding data privacy and storage: it was a challenge, if not completely impossible to maintain mass communications on a single platform internationally.

Modern ENS should be able to initiate communications where it makes the most sense, giving the appearance and cost-efficiency of a locally sourced message while offering the performance, resilience and connectivity of an enterprise solution while maintaining all standards for data protection compliance. They should use the latest technology to ensure the continued resiliency and performance of multinational communications while maintaining the regulatory compliance and familiarity of a local operation in several areas:

Localization
- Support for multiple languages in text-to-speech functionality
- Toll-free numbers
- Voice messaging in every country
- Localized SMS support

Data Compliance
- Member data stored in its region of origin
- Data completely separated from physical processing resources
- Non US countries will not be affected by US privacy laws
- Data is decoupled from functionality, allowing every country to have the same robust application without limitation

SMS
- Ability to send an SMS notification that originates from a local phone number– anywhere in the world
- Elimination of unintended recipient charges for international SMS rates
- Increased human responsiveness with a familiar number or short code

Voice
- Calls originate in the country of destination
- Increased human response rates with a familiar caller number
- Increased the speed at which the calls can be delivered

- Reduced international call traffic congestion
- Performance tailored to the standards of highly varied phone systems across the globe
- Reduced costs for customers by eliminating international calling rates

Mobility

There are over 5.9 billion mobile device subscriptions worldwide, representing 86% of the population, and the rate of adoption is increasing exponentially each year. This unprecedented level of connectivity means that individuals can both share and receive information from nearly anywhere with cellular reception.

The advent of mobile connectivity has provided great advances for mass communication. Whereas many legacy emergency notification systems previously relied on landline phones through a public directories, organizations and communities can now have recipients opt-in to mass notification systems with their mobile contact information offering several new contact paths at which they can be reached. If landlines are down, the only way to reach an individual may be through mobile devices.

On top of providing a tool for end-users to both receive notifications and send valuable information, mobile devices increase the ability with which administrators can initiate mass notification. One county in Washington State, USA recently had a forest fire, which required communication while the administrator was out of the office and away from normal computer access. Thankfully, he was connected to his mass notification through his Apple iPad™.

"I was up in the mountains facilitating search and rescue training this weekend, and we launched a notification call-out for a real search mission using the iPad app from a mountaintop with poor reception. It worked flawlessly and we were able to communicate with the key parties involved," said Ken Parrish of Pierce County, WA., U.S..

Resilience and Scale

Many organizations are moving computing power to "the cloud". This simply means that instead of installing software exclusively using on premise devices, software solutions can be hosted all across the globe and accessed from anywhere via the Internet. This increases accessibility, extensibility, redundancy and network resiliency for those organizations that utilize it.

With the critical nature of mass communication systems, resiliency and scale are the of the upmost importance. The cloud allows providers to develop an elastic infrastructure model, which is essential in ensuring near-infinite scalability in the case of large-scale emergencies or crises.

Legacy emergency notification systems often relied on too few resources or limited infrastructures that created bottlenecks of delivery during times of crises or large-scale emergencies—when delivery time matters most.

An ENS system should be able to handle standard operations on in-house data centers, but no provider on the market would be able to handle a national or even global disaster on their in-house processing power alone. For this, your organization needs to be sure that their mass communication provider has the ability to burst capacity to on-demand resources. By utilizing this additional capacity in the cloud, an infrastructure can expand (hence the elastic metaphor) and contract as needed to provide near-infinite scalability, on demand.

Accessibility

Emergency notification systems were created with very few contact paths with which communications could be broadcast. Most systems were limited to a single phone number or pager number, with basic character-limited text messaging being added a few years down the road. By limiting contact paths (through technology limitations) within the system, administrators are limiting their ability to communicate critical information to recipients.

Modern mass communication systems, on the other hand, take advantage of the fact that people communicate on multiple, different devices. The most advanced systems offer a multitude of available contact paths to which recipients can opt-in their information. Mobile phone, SMS text, push notification, land-line, email, pager, social media, fax and more are all legitimate ways to connect with individuals and should be enabled in a mass communication tool.

Additionally, mass communication platforms are designed to operate for individuals who might not all communicate in the same way. The most advanced systems allow recipients who opt-in their information to designate which contact paths should be used in which situations, ensuring the administrations broadcasting information have the best possible chances of getting that message to them as quickly and efficiently as possible.

By making all of these preferences available online and through native mobile applications for both administrator and recipient, the level of accessibility and customization far surpasses that of legacy emergency notification systems, creating the most optimal conditions for communicating information to a population of individuals.

Conclusion

The emergency notification industry has undergone many changes as a result of technological advances over the past decade. Every year emergency notification systems (ENS) became more advanced, more reliable and more capable of communicating critical information to those who needed it most. The emergency notification industry has evolved into the mass communication industry, utilizing advanced cloud technology, big data, mobility and social media to not only provide emergency notifications, but to increase day-to-day operational efficiencies and communications.

Your ENS strategy today should surpass legacy emergency notification systems in many ways. With increased reliability, systems will now respond and deliver communications as expected, no matter what size event is occurring, whether local, regional or global. With expansive and customizable opt-in contact paths, users can input preferences that allow the system to know *how* they want to be contacted in *what* circumstances they stipulate. Additionally with modern mass communication systems, mobile devices are served a native, full-featured solution that allow instant creation of custom broadcasts, full featured GIS mapping, sending to groups or individuals, scenario-based broadcasts and all the other advanced features they would expect from their platform.

The most significant advance comes with the increased intelligence and insight built into the platforms. With an increasingly connected populous, recipients are turned into the eyes and ears on the scene, with the ability to send messages and rich media like photos and videos back to administrators when requested. Combined with the insights available publicly on social media outlets and third party news feeds, this creates a detailed picture on a unified platform that greatly increases the level situational intelligence for all parties during the event.