A Vital Component of a University's Crisis Management Strategy

This paper outlines the significance of advanced wireless notification in an emergency

Content:

University Notification System

Having a proven, effective solution for crisis management is no longer a luxury for a College or University, it's a necessity! Crisis Management goes beyond simply planning how one will manage a crisis. Truly effective crisis management means planning your communication by putting the actual infrastructure management tools in place ahead of time so everyone and everything is ready to support the response effort if needed.

In an emergency, you need to have a robust system to alert your first responders and staff as a priority for coordination of the student population in emergencies. These emergencies can range from isolated structure fires to campus-wide disasters where hundreds of lives are at stake. You have to be prepared for everything from weather crises and other natural disasters to man-made disasters, acts of violence, civil disturbance and outbreaks of infectious diseases.

Now more than ever, Universities need to have plans in place to take a greater responsibility for the health and safety of their organization. Worst-case scenario planning requires establishing complex, hierarchically structured notification for many different types of groups for notification in a matter of minutes when needed. All the information concerning schedules, areas of specialization, etc. must be pre-defined within those groups to ensure an immediate, coordinated response.

The question is how well are you really equipped to notify the exact set of people within minutes of becoming aware of an emergency—large or small? In particular, how well has your organization deployed today's cutting-edge mobile communications technology to address this challenge? And … how quickly can you protect a group of endangered students? The truth is there is no one channel for communication that will cover all your needs and relying on sending emergency mass notification to the student body is a recipe for disaster.

Special Challenges a University Faces

Many of today's Campuses are spread out with thousands of students both living on and off campus and hundreds of teachers and staff. There are a number of technology decisions that to be evaluated to address such a diverse and mobile organization. In order to address them a methodical examination of the issues is imperative.

POTENTIAL ISSUES

- How best to communicate in a way that will establish and maintain order as opposed to adding to chaos. Consider Mass Coordination over Mass Notification.
- Normal methods of communication that can be used may not be appropriate or available
  i.e. Radio channels are sometimes too open for discrete coordination
- Email to a standard email account is ineffective for real-time notification or coordination
- Email delivery to a wireless device is highly unreliable for critical communication
- Voice broadcast maybe too slow or not available depending on the size of the emergency
- Multiple messages and updates are likely required
- With a constantly changing student population, how do you tell the right people first?
- Overloading precious communication resources such as cellular networks

What is the Ideal Solution for Your School?

An effective emergency notification system for a university campus can be a complex system to design. Several factors need to be considered and questions answered that will determine the best approach. All of these will determine a specific direction and the best technology to deploy.

How many first responders are on campus vs. local authorities?	Do you need a system that gives you full interoperability with outside groups for coordinated response? (i.e. police, fire sheriff etc.) The ideal solution would be able to connect both internal as well as external resources together.
Physical size of the campus	Does your campus cover a small or a large area? How many buildings do you have to potentially isolate or establish direct communication path with to feel comfortable? Can you communicate to any building? As most people on a campus including staff and students are highly mobile, the ideal solution will need to use the latest wireless text messaging technology to improve communication. Supplementary notification technology should be considered such as wall-mounted beacons that can be activated and sent instructions based on location.
Size of the student body	Are you a small campus with hundreds of students or one with thousands? In a small emergency, many systems will be able to help, but in a major situation, only the most sophisticated will be able to pinpoint your response. There is a major difference between delivering a hundred messages and delivering a thousand or more. Special consideration needs to be given to delivery method, as diversity is required.
Makeup of the student body • **Majority of classes on campus** • **How many Online and weekend students** • **Dorms onsite**	As you examine your ideal solution, you will want to look at the class structure and how many students you have on campus and when. Your ideal solution will give you the ability to define specific locations for mass notification to send a message first to specific locations first for coordination.

Pros and Cons of Common Available Delivery Methods

	Pros	Cons
Voice	▪ Easier to implement if access to a database of numbers ▪ No need for Carrier information	▪ Can be expensive for a hosted solution – have to pay whether it's used or not and no ownership ▪ In an emergency, the voice channels for both landline phones and for cell phones are limited. ▪ You will experience busy signals and lack of dial tone in a major situation ▪ Sending detailed instructions via voice can be ineffective
SMS via Email to wireless device	▪ Easy to support and implement as it is standard email ▪ All devices support text delivery via email ▪ Text is better for detailed instructions	▪ Not reliable as email is subject to delays due to carrier capacity limitations. These delays can last for hours before the message is successfully delivered if ever. ▪ Not traceable – you don't ever know if it was successful or not to carrier or device ▪ Lowest priority traffic to the carrier ▪ Need to know the carrier
SMS Text messages other than email protocol For your internal resources	▪ Fastest delivery as the carriers can handle this traffic very efficiently and have dedicated input pathways ▪ All devices support protocols other than email delivery ▪ Reliable – you can see if the message was passed off successfully ▪ Traceable – you can see if the alert was received by the device ▪ Text is better for detailed instructions	▪ Need to know the carrier ▪ The carriers each support various protocols ▪ Additional monthly fees for advanced service may apply
Notification Beacons	▪ No dependence on cellular infrastructure ▪ Individually addressable to select areas, buildings, and corridors ▪ Integrated siren, strobes, and large easy to read backlit text display ▪ No recurring fees	▪ Capital expenditure ▪ Require installation as they are wall mounted and connect with network

Notification Strategy for Mass *Coordination*

A comprehensive crisis management plan will generally look at a tiered approach of notification for a coordinated response to a variety of emergencies in order to minimize additional panic and misinformation.

Staff and teachers today are almost all equipped with cellular phones or pagers and thus using these devices as an element of a response plan is critical. The biggest challenge is using the most effective and reliable means to execute your strategy and you have many choices.

Our recommendation based on years of experience is a tiered approach always being sure your response priorities are clear. Using a combination of wireless notification to cell phones and pagers with notification beacons can ensure the University is using all its available resources effectively and responsibly.

Tier 1	**First Responders**	Your security teams and safety personnel always need to be at the top of the list and can include campus police and security staff, campus Fire Response units as well as off-campus authorities and agencies. Notification to this group should use the fastest, most reliable text message delivery method available. You should also be prepared to regularly send follow-up messages with additional instructions and updates.
Tier 2	**Administration Staff and RA's**	Messages to these groups are meant to quickly inform them of a situation and activate pre-defined response protocols. Staff and Resident Assistants should be trained in advanced on how to handle their areas of responsibility in the event of an emergency.
Tier 3	**Teachers**	With training and education beforehand, teachers can be an important part of a coordinated response
Tier 4	**Student Body notification though Beacons**	In the worst situations, the student body quickly needs information relevant to their location with clear instructions on what they are to do. With the current beacon technology, these instructions can be specific to the location with the ability to send updates as the situation changes. Sending SMS messages or voice messages in mass to student's cell phones can only further complicate a Universities response and cripple your ability to respond due to overloaded cellular networks.

Operational Value

A good system should be built for an emergency but useful for everyday campus operations. A system like HipLink can be used for standard wireless notification from either a desktop or applications like the campus IT network or even send alerts from your building management systems and fire safety systems.

How HipLinkXS Works…

HipLinkXS is an advanced tool for providing emergency alerts to a complex hierarchy of internal personnel including emergency operations departments, campus security teams, teachers, offsite firefighters and law-enforcement personnel and to the student body. Need to send an emergency message to ten people? One hundred? A thousand? HipLink supports virtually every carrier and device, and gives you the tools at your fingertips to create the fastest, most coordinated response to each emergency scenario.

HipLink lets your organization establish an unlimited number of groups that can correspond to different types of potential disasters that represent real threats: fires, infectious disease outbreaks, terrorist attacks, civil disturbance, earthquakes, storms, etc. In fact, any scenario that you have already created a contingency plan for, you can create one or more groups in HipLink that correspond to that scenario for response. You can also group your organization by location such as The Harris Dorm or East Campus. Other group types for instance could be the Science Department, All RA's, the library staff, maintenance personnel or computer screens in common areas. The Notification Beacons can also be arranged in groups by floor, building or groups of buildings.

Once you have your groups defined, you simply populate it with the individuals, computers, beacons or existing groups you have for your everyday operation. You then build a series of scenario templates using our send template feature and this you to build a message quickly with a few drop downs or fields to fill in.

To Send a Message
When an incidence that needs attention occurs, your staff can access HipLink from anywhere you have Internet connectivity. Click on a group, either type a message or select a template, and then press send. The Sender can even select *High Priority* to have the message go to the front of the queue. Depending on your needs, your message now goes to ten people, a hundred people, or thousands.

HipLinkXS, with its easy to use desktop alerting features enables you to execute plans to:

- Get people mobilized with as little delay and confusion as possible
- Provide alerts and notifications under a single umbrella to the widest possible range of devices: phones, pagers, fax machines, email, PDAs, computer screens, etc.
- Deploy two-way messaging, ensuring that all alerts are received, confirmed and that first responders can effectively request more help if needed
- Review detailed logging and reporting in real-time
- Switch protocols or networks, in cases where a disaster knocks out a key piece of infrastructure
- Generate immediate alerts for large groups of students in an affected area, based on proximity to a problem area through strategically placed Notification Beacons

HipLinkXS Features

As a platform, HipLinkXS provides a robust, secure, and highly scalable wireless communications software solution designed to meet the critical messaging needs of any organization.

HipLinkXS communicates with ***any data or voice enabled wireless device*** supporting numeric, alpha numeric or voice transmission of critical data and remote access to corporate systems. Other connections can be done through computer screen pop ups and messages sent to notification beacons… all from one interface.

Any solution needs to include the ability for both voice delivery of messages and ***Interactive Voice Response (IVR)*** functions. HipLink has advanced features for both built into its platform.

Easy to use Desktop Interface
HipLink has a robust Web browser GUI that has been highly praised for its intuitiveness and easy to use interface. Because Hiplink is a completely browser based system, the University has a universal access to their notification system at any time, from anywhere they have Internet access.

Student Notification and Coordination
Getting the message to students is the hardest part of any University's plan. Coordinating staff for *Mass Coordination* is the key. From the desktop interface, the sender can activate pop-ups on computer screens, digital signage and notification beacons.

All Delivery Protocols Supported
HipLink supports all carriers, all devices with no dependence on email. The software is capable of balancing messages between multiple ports on multiple servers (clusters) within an organization and supports a wide range of standard wireless protocols.

TAP	SNPP	DTMF
GSM	WCTP	SMPP
HTTP	BES push	UCP
XML	WNM	SMTP (E-mail)

You can reach all your pagers, cell phones, and PDA devices via your existing carriers. Also supported is the ability to push a message to a computer screen as a pop-up window as well as to Notification Beacons.

HIPLINK BENEFITS

Easy to use web-based interface you can access anywhere

Its easy to send messages to large groups of people all at once

Assign unlimited levels of permission to users for increased security

Supports all text and voice capable wireless devices and all major carriers.

People with more than one wireless device can receive messages on any one or all of their devices

Easy to install and runs on numerous operating systems

Flexibility to send messages to wireless devices with different carriers and protocols.

Administrators can accurately track all messages and monitor the effectiveness of their messaging system

Robust message escalation capabilities ensures messages are never missed

Administrators can quickly respond to system outages/application downtimes

Employees may easily update their device specific information facilitating accurate delivery

Grouping
A major component of the HipLinkXS software that facilitates faster message delivery is its ***grouping feature*** that ensures the right messages or tasks are delivered to the right individuals all the time, at any time.

In some cases, you may divide your organization by location, task or scenario and then assign specific individuals to the appropriate response. Once you have your group structure defined, you simply populate it with the individuals, locations or groups you have for your everyday operation. You then can build a series of scenario templates using our message template feature and this enables very fast message creation and delivery with just a few drop downs or fields to fill in.

The types of groups include:

- ***Broadcast Groups*** where everyone in the group gets the message.
- ***On-duty Groups*** which allow you to schedule your resources and then send an alert to the one person or group on-call for proper distribution any time of the day or night.
- ***Rotate Groups*** for even distribution.
- ***Escalation Groups*** for mission critical alerts that require confirmation or escalation occurs to other team members.
- ***Subscription Groups*** informational update group that allow for opt-in membership.
- ***Follow-Me Groups*** allow multiple receivers to be set up for one individual and messages delivered by schedule or in order.

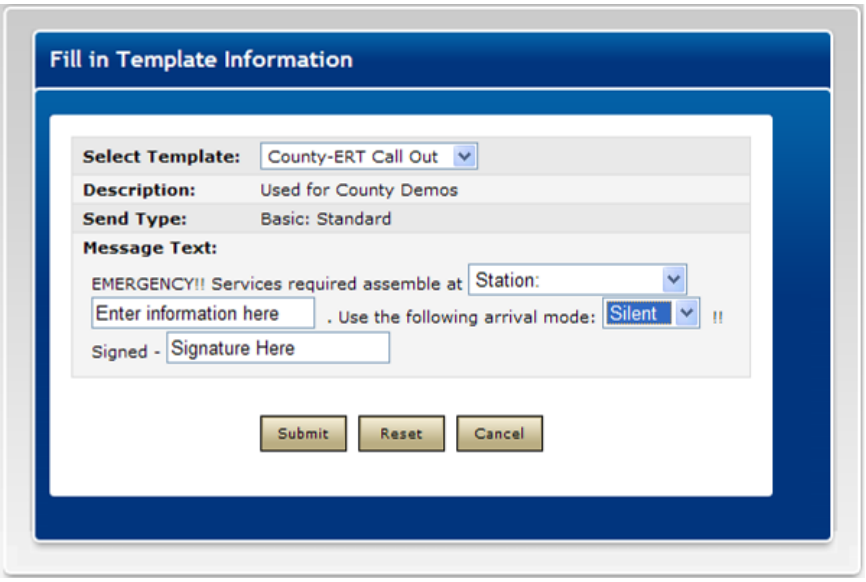
One of the unique features of HipLink is that any group can be ***nested*** inside another. This gives the organization powerful tools for building the response groups easily from the existing organization.

Creating Maximum Reliability – System, Device and Protocol Redundancy
In addition to supporting multiple wireless protocols, HipLink has ***built in failover functionality*** at the carrier and the receiver level that assures message delivery even if the primary delivery method should fail.

Departments for Easy Administration
Even the most powerful solution can be inadequate if the administration and upkeep is dependent on one unit of the organization. HipLinkXS' ***Department feature*** allows for assignment of unlimited levels of permissions for the distribution of administration and delegation of user hierarchy functions downward, while preserving control. Smaller parts of the organization can support their own users, update schedules, and give permissions so that your wireless platform is always maintained and current with little, if any, impact on the organization as a whole.

Easy Deployment and Integration
With its ***powerful integration tools***, HipLink has successfully integrated into hundreds of software applications, including dispatch both internal PBX and 911, emergency information data feeds, network tools, Help Desk applications and many more. The same HipLink installation for critical desktop messaging can be used for application paging.

Template Sending
Allows you to create templates for rapid response to scenarios that happen frequently where only unique parameters change. Rather than typing a new detailed message you can access a predefined message template and select specific parameters through drop-down menus.



Advanced Send Features
The Advanced Send features further enhances the sending features by allowing you to set up automated response actions that can schedule when messages are automatically sent, automatic escalations associated with the particular message and messages designed for fax and voice.

Message Logging and Response
Every event and message is logged in HipLink. Using this information and ***the reporting capabilities*** of HipLink, a detailed picture that includes a statistical analysis of message activity and carrier performance can be viewed in real-time for monitoring the effectiveness of a deployed wireless strategy. These reports are often used for auditing purposes or to analyze the effectiveness of a drill. If you can measure it, you can improve it.

Two-way Remote Access
The built-in two-way capabilities of HipLinkXS allow mobile employees with PDA's to access back-end data or execute actions remotely and securely. HipLink's ***custom 2-way Application Builder*** gives our clients a compelling tool to create specific applications with the commands and functions that are important to its users.

Subscription to Alerts
Using HipLink, a University can have a web page that students can use to opt-in for alerts. On this page they would provide the details the school determines would place them in the correct group such as whether they live on or off campus and if they live on and which dorm. In addition, the subscription page allows the system to gather information about their wireless device and store it for the fastest delivery in the event it is required.

XML Interface
HipLink has the capability of accepting an XML file for message processing as well. This feature valuable if the school would like to send a list of notification directly to HipLink from a database query.

Notification Beacon for Mass Notification

Alertus Emergency Notification Beacons provide real time communication via FM radio data subcarrier technology and/or Ethernet/802.11. For critical alerts, radio communication offers superior reliability because of the point-to-multipoint broadcast transmission. Many institutions have deployed robust Ethernet/802.11 infrastructure, and Alertus Emergency Notification Beacons may be network deployed as well, or as a hybrid solution. The Alertus solution is scalable across your campus footprint, yet flexible for any location.

Features

- All hazards
- Localized addressing to select areas, buildings, and corridors
- Reliable wireless radio technology developed at the University of Maryland
- Instantaneous
- Integrated siren, strobes, and large easy to read backlit text display
    3. Designate severity level (for audible and visual signaling) and duration
- Rechargeable battery backup

Benefits

Alertus Emergency Notification Beacons are the only facility alerting device with integrated audio visual signaling and notification.

Company Background
Semotus Solutions has years of experience in the wireless notification industry starting from 1993 and has been a publicly traded company since 1996. We are a premier provider of software for wireless and voice communication for a large number of large organizations including many in the public safety arena. Semotus Solutions continues to set high standards for the Enterprise messaging platform. As the industry has changed and evolved so has Semotus Solutions. We have demonstrated our ability to keep pace with the changing environment of the wireless industry with our aggressive product releases as well as significant additions to the product yearly. In HipLink you not only have a product that meets all your needs but you also have access to the extensive consulting experience we have in the industry.

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