

Emergency and Mass Notification Systems *Gaps and Design Improvements*

The latest DOJ report by the Bureau of Justice Statistics on Campus Law Enforcement (January 2015) stated that nearly all 4 year institutions with 5,000 or more students enrolled during the 2011-2012 academic years had:

“... a mass notification system that used email, text messages and other methods to alert and instruct students, faculty and staff in emergency situations”

This is a marked improvement from prior years when emergency text messaging was not as widely adopted. Since then campuses have implemented email messaging, desktop notifications, Code Blue call stations (CodeBlue.com), warning sirens, outdoor speakers, voice over fire alarms and LCD monitors as additional methods of communication during an emergency.

However, there are still gaps that should be filled to ensure the reach of the EMNS (Emergency or Mass Notification System) extends to everyone who may be on-campus during an emergency, since not everyone on campus may be subscribed to the EMNS.

According to the DOJ findings, 63% of 4-year campuses had voluntary, *opt-in* EMNS participation for first-year students (66% at public institutions and 55% at private). 33% of campuses *required the students enroll* but could elect to *opt-out* of coverage at some point in the future. Faculty, administrators and staff used EMNS on an *opt-in* basis at 70% of campuses, and 26% required faculty, administrators and staff to *opt-out* of coverage if they did not want to receive notifications. This data shows that at 63% of college campuses, subscribing to the EMNS is a voluntary action. Download the full report here: <https://www.bjs.gov/content/pub/pdf/cle1112.pdf>

In 2009, Campus Safety magazine (<http://www.campussafetymagazine.com/>) polled campus protection officials and found that “87 percent said their schools currently use text messaging for emergency alerts, and that an average of 48.9 percent of students sign up for such programs.”

That leaves a big gap in the number of students covered by an EMNS – over half aren’t covered although almost 100% of schools had an EMNS available in 2011-2012. Even if we assume the enrollment numbers have gone up substantially from 2009 to 2011, it’s likely a good number of the student body would not get an emergency text message delivered to their phone in an emergency.

Now let’s think about the total campus population at any given time, and who likely would not be subscribed to an EMNS besides the non-participants in the student body:

- Prospective first-years and their parents, visiting the campus
- Parcel delivery service personnel
- Building contractors and subcontractors
- Other guests (guest speakers, visiting professors, other out of area visitors and dignitaries)
- Students and faculty who are subscribed to the EMNS service, but whose hands are full and cell phones are in pockets, purses or briefcases
- Subscribers with phones on mute, or with phones with dead batteries
- Administration, faculty and other staff “opt-outers” or those who never opted in to the EMNS

All these stakeholders would then be totally reliant on visual and audible alerts to provide a safe course of action in case of an emergency. And what constitutes an emergency? In the Gartner EMNS Tech Insight published in 2014 (<https://www.gartner.com/doc/2696222/magic-quadrant-emergencymass-notification-services>), multiple use cases for EMNS in an emergency were identified:

- Evacuation management and mustering; widespread health risks and scares; active shooters, armed intruders; missing persons; kidnappings; hazardous material releases
- Natural disasters such as tornado warnings, earthquakes, tsunamis, wild fires; political events (protests, terrorist attacks); power outages, transportation outages, government emergency operations and social media events
- Business operations notifications including network security alerts and cyber attacks; dangerous goods deliveries; facility closures; hostile takeovers; industrial accidents

Operational Checklist (derived from Clause 8 of ISO 22301 and 22313)

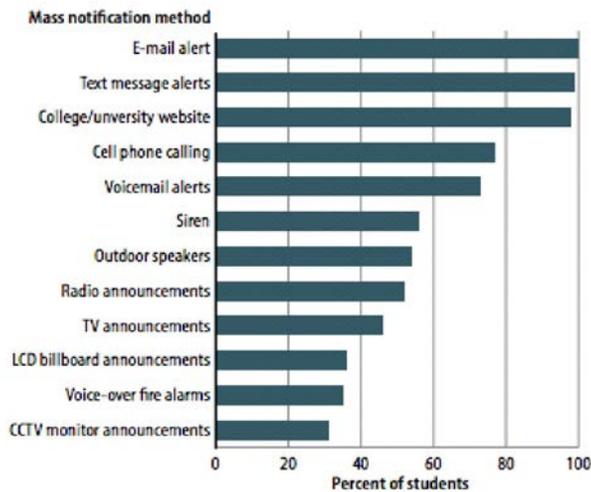
- ✓ Establish appropriate communication procedures and protocols for activation, operation and coordination
- ✓ Using life safety as first priority, consult with interested parties to decide whether to communicate externally about an organization's significant risks
- ✓ Implement and maintain procedures for Warning and Communication
 - detecting and monitoring an impending incident
 - receiving, documenting, and responding to communication from interested parties
 - receiving, documenting, and responding to any national or regional risk advisory systems or equivalent
 - alerting interested parties that might be impacted
 - operating a communications facility
 - assuring that the means of communication remains available during an incident
 - supporting structured communications with emergency responders
 - record vital information about the incident, including actions taken and decisions made
 - ensure interoperability of multiple responding organizations and personnel
 - regular exercising of warning and communication procedures

In 2012, the International Organization for Standardization (ISO) released Standard 22301 and 22313, Business Continuity Management System Standards and Application for Incident Communication Plans. Everbridge, a leading EMNS solution provider, published a whitepaper summarizing those standards from which this checklist is excerpted.

Source:

<http://go.everbridge.com/ISO-22301--22313-Whitepaper-Email---Website---Mar-2013-Confirmation-Page.html?aliId=297948496>

FIGURE 11
Percent of students enrolled on campuses using mass notification methods on 4-year campuses with 5,000 or more students, 2011–12



Source: Bureau of Justice Statistics, Survey of Campus Law Enforcement Agencies, 2011–12.

Obviously, more organizations are now planning for business continuity, standards are being developed, new procedures implemented to warn and instruct during incidents, and EMNS are an integral part of that planning.

As EMNS design has matured, a “best practice” has evolved: build as many message delivery vehicles into your notification solution as is financially feasible. This table (again, from the 2015 DOJ report) lists the various alerting forms in use.



Clearly there’s a reliance on text messaging providers as the EMNS of choice. Given the substantial penetration rate of text messaging solutions at college campuses and the “open-source” type of communication most of the providers utilize (RSS, XML and CAP feeds), it is not a difficult task to integrate to these systems to other endpoints. This will provide an additional delivery medium for those aren’t subscribed, or don’t have access to, the EMNS that the campus has deployed.

Adding high visibility LED message displays to the overall solution is one option that yields a high return on investment and provides a larger audience with real-time guidance, without involvement of any extra personnel. Here’s how it works...

The authorized user(s) of the installed EMNS generates the emergency message, using the EMNS as they normally would. That message is delivered in a variety of forms, depending on the provider (CAP, RSS, email, SMS). The LED EMNS appliance is pre-configured to poll the campus’ account with the EMNS provider, pick up any message published by the campus and display it on the high visibility LED displays.

One of the most widely implemented uses of EMNS visual alerting is to control ingress and egress during a “lockdown” situation. Here’s a description of what “lockdown” means to Marymount California University:

Lockdown procedures for the Palos Verdes (Oceanview) Campus

In the event of a police action, such as an “Active Shooter,” it may be necessary to “lockdown” the campus to limit access, protect lives and minimize the overall exposure to danger.

LOCKDOWN DEFINITION

A “lockdown” is a temporary sheltering technique, usually lasting from 30 minutes to several hours, used by law enforcement to limit civilian exposure to an “Active Shooter” or a similar incident. When alerted, occupants of any building within the subject area will lock all doors and windows. Do not allow entry or exit to anyone until the “all clear” has been sounded. This procedure converts any building into a large “safe room.”

IF A HOSTILE INTRUDER IS ON CAMPUS

The director of Campus Safety and Security or a designee evaluates the situation and takes immediate action to protect life and property. The Dean of Students and other University officers are notified as soon as the situation allows. Students, faculty and staff are alerted via bullhorns, telephones, in-person notification, e2Campus text and/or the University public address system.

In the case above, the LED EMNS appliance would automatically retrieve the e2Campus text message and display it in an easily readable, “movie credit” scroll, within 30 seconds or less after entry into e2Campus (<http://www.e2campus.com/>)

As an additional benefit, the LED appliances are Power over Ethernet, meaning no AC electrical outlet is required at the display location. A powered switch is installed at the source of the Ethernet cable and that one cable provides power to the appliance as well as message data. This method of powering the displays reduces cost and provides for an easy backup power source (UPS, or battery backup) keeping the LED appliances operational and highly visible in the event of a power outage.

For more information on high visibility LED EMNS appliances visit:
<https://www.inovasolutions.com/emergency-communications/product/onalert-emergency-led-displays>