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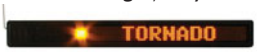
Your Mass Notification Cheat Sheet

Here's the latest breakdown review of the more commonly used emergency alert systems. Deploying multiple modes will help to ensure the strengths of one solution compensate for the weaknesses of others. Many of these solutions can now be linked with each other so messages can reach more individuals on or near a campus, as well as other stakeholders, such as family members. Be certain to test the systems regularly, and account for the hearing and sight impaired.

By Robin Hattersley Gray

SOLUTION	STRENGTHS	WEAKNESSES	APPLICATION COMMENTS
CALL BOXES  Photo courtesy Code Blue	• Since they are already installed on many campuses, the technology can be repurposed to push information out • Loudspeakers can be installed for mass notification purposes • Individuals located in the area of a call box can communicate with campus law enforcement/security who can pinpoint callers' locations • No sign-up required to receive messages • Campus constituents are familiar with this type of technology • Strobes that are normally installed can alert hearing impaired	• With traditional units, there are challenges with voice intelligibility • Depending on the type of traditional units installed, speakers may not be loud enough for individuals standing away from the devices to hear an announcement • Some units are not designed for communications inside buildings • Cost due to hardwiring or maintenance • Older or more basic versions designed for 9-1-1 calls and assistance calls, not to be warning devices • Some models can't cater messages for specific areas	• Normally deployed in parking lots, intramural fields, bike trails and other remote areas not easily reached by other means of communication. Also deployed around campus (outside and inside). • Security cameras can be installed on them for additional situational awareness • Wireless units can overcome some cost, installation and hardwire issues • Manufacturers of OEM equipment provide application-specific solutions that allow for audio clarity, tailored sound dispersion and comply with NFPA 72 2010, Chapter 24 • No additional infrastructure is needed with OEM manufacturers
DIGITAL DISPLAYS (changeable message signs, LED signs, LCD signs, etc.)  Photo courtesy BRG Precision Wireless	• Many are portable • No sign-up required to receive messages • Reach hearing impaired • Good return on investment if used regularly for non-emergencies • Intrusive when properly deployed • Many can integrate with other solutions for a multi-modal approach • Some use Power over Ethernet (POE), reducing energy usage	• Can be costly on large campuses with many rooms or due to hardwiring or maintenance issues • Can be overlooked if not used regularly or placed properly • Portable units can take time to deploy	• Good for traffic control, crowd control and alerts during major events (football games, concerts, etc.) • Can be deployed inside buildings (classrooms, hallways) and public areas (cafeterias, student unions) • In many cases they should be used for routine communications so that the public is trained to expect they will get useful information from them
E-MAILS 	• Can leverage pre-existing E-mail system • Effective for messages going to staff who have computers controlled by the campus • Campus constituents can't opt out of the system • Communicates with off-campus constituents • Can be used for non-emergency communications (attendance notification, outreach and important reminders) • Can integrate with solutions for a multi-modal approach	• Not very reliable. Not everyone checks their E-mails immediately (e.g. Message recipients in class, with a patient, or away from their desks or PDAs) • Server overloads may result, causing delays in message receipt • Messages may be mistakenly classified as spam by recipients or third-party servers • Students sometimes configure their E-mails to block institution-initiated messages • Often follow-up messages can't be sent until the initial E-mail is delivered	• E-mails can be prioritized so they get through faster • Divide recipient list into appropriate groups (e.g. by campus) and when possible, only send messages to affected individuals • Know how many E-mails per minute your network can handle. Too many could overload the system. • Test the system regularly • Educate message recipients on how to sign up for the system, what they should expect and how to configure their spam filters
INTERCOMS	• Because they are frequently used in medical centers for regular business, they offer a good return on investment • In most hospital cultures, staff are accustomed to using this solution • On many educational campuses, intercoms are already installed and can communicate emergency alerts	• Not as applicable to educational campuses for mass notification purposes • Many are not supervised, so campus facility personnel might not know when speakers or system are in disrepair	• Used frequently in hospitals by employees. Because the campus has more control over its staff (versus students on college campuses), a higher level of training can be achieved, making the system very effective for mass communication during emergencies.
LOUDSPEAKERS (fixed or portable, aka "Giant Voice")	• Inexpensive • Cover a large area • No sign-up required to receive messages • Highly intrusive • Some call boxes have loudspeakers installed on them for improved coverage of parking lots, intramural fields, bike trails and other remote areas not easily reached by other means of communication	• Dead spots • Challenges with voice intelligibility • Aesthetics (depending on type, speakers can be very large) • Portable solutions can be expensive • Unintended message recipients (e.g. Neighbors in residential areas)	• Very useful at athletic events • Increase effectiveness by combining with strobe lights to alert hearing-impaired • If conducting a test and another area is in earshot but is not the intended recipient, announce the test well in advance to prevent unnecessary alarm • Consider the topography of the area where the speakers will be deployed to get the maximum output so messages reach their intended targets
PHONE TREES/ TELEPHONY 	• Location and recipient specific • Call receipt acknowledgement • Compatible with major mapping systems • TTY/TDD calling for the hearing impaired • Remote launching capability • Can be used for non-emergency communications (attendance notification, outreach and important reminders)	• Cost • Database management • For calls going to landlines, recipients might not be where the phone is located, depending on time of day • Landlines might not be connected/cell phones might not be turned on • Requires sign-up • Relies on customer support for upgrades	• Effective for small scale mass notification (e.g. Emergency teams, small communities, hospital staff) and during the evening • Not appropriate for large scale notifications due to limited trunk or cell tower capacity. Landlines and cellular providers might experience service failure/saturation during a major incident.

SOLUTION	STRENGTHS	WEAKNESSES	APPLICATION COMMENTS
POPUP MESSAGE (banners) on computer screens  Photo courtesy React Systems	• Allow messages to be displayed on computer desktops and PowerPoint presentations even if the user has not logged into E-mail • Intrusive for those at their computers or sitting in class watching presentations • Relatively inexpensive • Messages can be discreetly specified for individuals or groups of persons	• Currently not effective on computers that are not controlled by the campus, unless the institution sets up a process whereby message recipients can enroll to receive alerts on their computers • Messages do not reach those campus constituents who are not logged onto their computers	• Effective for messages going to staff and faculty who have computers controlled by the campus • Future technology might enable pop-up messages to reach students and other visitors on their personal computers who are logged onto the campus wireless network
SIRENS	• Inexpensive • Cover a large area • No sign-up required to receive messages • Highly intrusive • Versions with strobe lights alert hearing impaired	• Dead spots • Inability to communicate specific messages • Limited indoor use • Frequent tests required	• Good for alerts • A network of sirens can be deployed to overcome some dead spot issues • Can be mixed with voice instruction and strobes for improved communication of specific information
TEXT (SMS) MESSAGING 	• Most college students pay attention to text messages they receive on their cell phones • Effective way of communicating with parents of K-12 students (via cell phones, PDAs, etc.) and off-campus constituents • Text delivered via a separate control channel that is reserved for data only on cell networks. Solution uses much less bandwidth than voice. • Can be used for non-emergency communications (attendance notification, outreach and important reminders)	• Messages may be considered spam by some systems and/or recipients • Cost • If cellular service is disrupted, messages might not go out or delivery will be delayed • Registration required • Database management challenges • Trunk capacity may slow message delivery • Many K-12 districts do not allow students to have cell phones on campus. College professors may require students to turn off cell phones during class. • Messages cannot be catered to a specific area; must be general • Some smaller, regional carriers don't have agreements with major carriers, which prevents the messages from being delivered	• Develop credibility of system and institution by only using it when appropriate • Test the system regularly • Educate message recipients on how to sign up and what they should expect from the solution • Database of intended recipients can be broken down by distribution groups to increase delivery speed • Those who sign-up should verify they have an SMS messaging plan, otherwise messages might not be delivered • If using a third-party vendor, make sure they have made the appropriate arrangements with aggregators and cell carriers so their emergency messages won't be delayed or blocked • Have the message originate from the institution rather than a vendor to increase the likelihood that the message will be prioritized correctly
VOICE EVACUATION SYSTEMS (connected to the fire system)	• Since they have been in place on campuses for years, the technology can be repurposed for mass notification • Highly regulated by industry codes and are fully supervised so campus personnel are informed immediately when system or portions of system are not functioning • Have power back-up, so they will work even if there is a blackout	• Mainly deployed indoors • Voice intelligibility issues • Do not reach the hearing impaired	• For very tight applications, campuses can put external speakers off of a fire alarm voice evacuation system on the exterior of a building. • Combine with strobes to reach the hearing impaired • 2010 NPFA code changes apply
WEATHER RADIOS	• Preprogrammed to activate during weather warnings • Can also send civil emergency messages	• Announcements are usually not site or campus specific	• Counties might eventually become subdivided so a campus can receive its own designation for alerts
WEB SITE ANNOUNCEMENTS	• Information can be updated quickly • Can leverage pre-existing campus Web site at no additional cost • Good for communicating information to those outside of campus (parents, media, etc.) • RSS feeds can automatically populate social networking portals (Facebook, MySpace, Twitter, etc.)	• Sites can become overloaded when there is a lot of traffic due to limited server capacity • Web sites might not be regularly checked by campus constituents • Is a passive information delivery mechanism; is not intrusive	• Incorporate catastrophic bandwidth options by temporarily limiting use of graphics and scripting during emergencies so more people can access site without it crashing • In hazard-prone areas, Web sites should be redundant, being hosted (as back-up) in an off-site area where there are fewer hazards • Other mass notification systems often direct campus community to check Web site for additional information
800 NUMBERS (hotlines)	• Inexpensive • Message center usually located away from area where disaster is occurring so the line remains functional • Not limited by number of landlines on campus	• Is a passive information delivery mechanism; is not intrusive • Can be limited by local cell tower and other capacity issues • Messages cannot be catered to a specific area; must be general	• Particularly appropriate for providing information to those outside of affected area (parents, media, etc.)

For information on bullhorns, posters, radio announcements, social media, Common Alerting Protocol (CAP)/IPAWS, digital television feeds, RSS feeds and smart phone apps, visit www.CampusSafetyMagazine.com/MassNotificationCheatSheet2

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Michigan State U. Deploys Scalable Mass Notification and Emergency Communications System

New system effectively manages emergency messages distributed through loudspeakers, residence hall phones, call boxes and E-mails to improve campus safety while reducing costs and paving the way for future expansion.

MSU was able to save money by removing its residence hall phone lines while providing a means for mass notification.

Like many campuses around the nation, the need to reduce costs and inprove student, faculty and public safety was a challenge facing the Michigan State University Police, Telecommunication Systems and Campus Living Services departments in 2009. In the midst of increasing financial pressures, the Michigan State Physical Plant's Telecommunication's staff came up with an unprecedented approach to this challenge.

REMOVAL OF DORM PHONE LINES LEADS TO COST SAVINGS

As a primary emergency voice communication systems provider to MSU for several years, Code Blue Corp. reviewed the school's requirements and developed a solution for an in- and out-of-doors mass notification system. This dedicated system would initially serve residence halls, but could be expanded to cover the entire campus.

Every MSU campus building utilizes Code Blue's ToolVox for emergency communications.

To reduce monthly residence hall operating costs for campus living services, the telecom systems department selected several existing and new Code Blue offerings. Cost reductions resulted from the removal of all residence hall telephone lines, while providing a means for emergency voice communication and a mass notification system for the MSU Police Department.

More than 500 Code Blue PAS 2-e units were strategically installed on each residence hall floor to administer two-way emergency 911 voice calls and mass notification. Every campus building also utilizes Code Blue's ToolVox®, an IP communication manager and two integrated applications: Unit Programming and Diagnostics, providing 24/7 fault monitoring and system configuration, and Blue Alert™ overseeing mass notification control and integration with existing systems.

Seventeen ToolVox IP Communication Managers were networked utilizing MSU's existing telecom network infrastructure providing a highly redundant, distributed system. The redundant ToolVox managers were also integrated with the Avaya Communication Manager system to leverage the current telecom infrastructure as the primary communication path for all inbound and outbound calls. Local telephone connections were retained via ToolVox in each residence hall providing redundant call routing to 911 to thwart IP network outages.

SYSTEM CAN BE ACTIVATED VIA CELL PHONE OR EOC

The integration with the Avaya PBX permits any phone with the appropriate permissions to make mass notification announcements to individual PAS 2-e units or up to 30 different zones of units created by telecom for varying levels of geographic coverage. Each zone has an assigned phone number for access from outside the Avaya system to allow the campus police to activate the system from a cellular telephone or from their emergency operations center (EOC). Emergency calls placed by hitting the red button on the devices are routed to the local PSAP (911) center from the PAS 2-e speakerphone connected to the local ToolVox; then networked to redundant ToolVox servers integrated with their Avaya Communication Manager system through H.323 IP trunks to provide an additional layer of redundancy.

Besides the emergency voice and mass notification system, the Code Blue turnkey solution also features self-monitoring, E-mail notification of critical issues, remote management, effortless integration with existing systems, and more. In addition to the realized cost savings, student, staff and public safety have been enhanced with a scalable mass notification system.

THE SOLUTIONS YOU NEED

THE ability to resolve emergency communication issues has never been more demanding. Code Blue now offers turnkey solutions to meet the diverse requirements of your security needs.

Code Blue's authentic solutions include full duplex analog and IP speakerphones; robust public address systems; NFPA® mass notification-compliant, unit management and self-diagnostic software; area-of-rescue; and the cost effective ToolVox® IP Communication Manager offering analog/IP operation, unparalleled system integration and scalability.

Whether you're interested in stand-alone products or comprehensive solutions, you can depend on the industry technology leader. For more information, webinar or live demo, contact us at:

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