Emergency Management in Higher Education

Whether it is the threat of a terrorist act, a severe storm or power outage, when disaster strikes, planning and preparation profoundly affect a university's ability to deal with the consequences.

While more higher education institutions are developing emergency management strategies for major incidents, successful implementation depends on the capacity for fast communication with multiple audiences – from first responders and the emergency services, to social networks, the media and those on campus.

In this paper we consider the implications for campus operations and examine how the latest technologies can inform preparedness, transforming response to major incidents and enabling mass communication to facilitate better outcomes and ensure business continuity.

Prepare for the worst

Everyone hopes that the worst will never happen. But, as events at Dunblane in 1996, Columbine High School in 1999, Beslan Elementary School in 2004, Virginia Tech in 2007, Norway's Utoya Island summer camp in 2011 and at Garissa University College, Kenya on April 2, 2015 tragically demonstrated, universities, students and schools can be vulnerable. Fortunately, mass shootings and terrorist acts are rare in most countries, however universities and colleges must be ready with detailed contingency plans that can be implemented quickly for all types of emergency.

Risks increase as universities become more diverse, complex and old property boundaries become porous or disappear altogether. As with emergency fire procedures, most universities now consider active shooter, bomb threat and terror alert scenarios in their crisis plans. But the range of risks that could disrupt operations on a major scale is wide and varied, including a contagious disease outbreak, food poisoning, chemical leak, gas explosion,

asbestos release, public transport crash, severe weather event, major systems failure (network or power outage), kidnapping or serial assailant.

With the proliferation of CCTV, building access control and emergency warning systems, there has never been more security technology on campus. But physical security infrastructure is only one part of an emergency management arsenal. Minimising the impact of a major incident requires additional measures to overcome some of the most common challenges.

Key challenges

> **" It is a fair inference, given the differing situations in New York City and Northern Virginia that the problems in command, control and communications that occurred at both sites will likely recur in any emergency of similar scale. The task looking forward is to enable first responders to respond in a coordinated manner with the greatest possible awareness of the situation."** [1]
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> - 9/11 COMMISSION REPORT

From terror attacks to severe weather events, follow-up reports consistently identify that the same types of challenges are common to all crisis situations, with similar errors occurring over and over again. Typically these include communication systems failure, fractured command and control structures and delayed deployment of resources.

LACK OF LEADERSHIP

Most emergencies involve multiple response teams and agencies, so it is vital to know who is in charge, who is responsible for what and how responders should collaborate, share intelligence and liaise at each stage in the event. Having a competent crisis leader within the executive team is also critical, although the role calls for a very different leadership style to that normally found in university senior management teams.

Immediate incident response is critical, but once an alert has been raised, most current command and control systems lack a complete live situation overview or ability to share vital information across the security team as an incident unfolds. If the leadership team struggles to share vital intelligence with in-house security staff, first aiders, the emergency services and other relevant responders, it compounds the practical difficulties of coordinating a rapid response, hindering the chances of a successful outcome.

[1] 9-11 Commission (USA): 911 Report - http://www.9-11commission.gov/report/911Report.pdf (Section 9.3 page 315)

WEAK COMMUNICATIONS

Effective communication is integral to the success of any emergency management operation, yet too often is the weakest link. It includes information exchange within the response team, dialogue with staff, students and others immediately affected by the emergency and liaison with the wider public via the media. Crisis messaging must be managed with the utmost care in the hours and days after the initial incident.

Few universities have the resources to reliably manage mass notifications to large groups across dispersed estates, or the capability to accurately geo-target tailored messages to groups in disparate locations. Dependence on conventional two-way radio as the sole means of communication is limiting, while SMS services are a costly and arguably slow, unreliable way to execute accurate, targeted mass communication.

POOR PLANNING

Planning for a major emergency makes sound commercial sense, yet until fairly recently in the higher education sector it had been largely overlooked, done superficially or simply left to chance.

Routine approaches to small-scale or less complex incidents do not scale for managing a major disruption. Yet evidence from the field repeatedly suggests that organisations that fail to implement systematic and well-rehearsed emergency procedures will struggle to manage a serious situation without detrimental implications for their continued business operations, stakeholder relationships, and long-term reputation and in most cases, suffer serious financial losses which might otherwise have been avoided.

RESOURCE CONSTRAINTS

Higher education campuses are notoriously difficult to secure and with funding under pressure, the emergence of new threats and the complexity of multi-site campus operations expanding to operate 24 hours per day, security budgets are being stretched ever further.

INSUFFICIENT FOCUS ON REPUTATION MANAGEMENT

Public, media and political expectations are high when it comes to managing emergencies. Bad news spreads fast via social networks and can quickly spiral out of control, potentially doing long-term damage to a brand and reputation that it has taken years to build.

Can institutional reputation be protected and managed in the event of a crisis? Can well-managed crisis communications through a critical incident actually enhance an institution's image?

Addressing the challenges

Emergency management planning and execution require that human resources work in tandem with operational resources to overcome the above challenges. It is not enough to simply purchase a mass-messaging service or install an emergency warning system. A comprehensive, holistic approach is required that includes messaging, frontline staff training and all aspects of preparation to ensure that rapid response can be mobilised and successfully executed.

Planning, leadership and preparedness

It is often said that failing to plan is a plan to fail. Fortunately several valuable guides have emerged on creating and maintaining emergency management plans, notably: *Resilience in Higher Education – an updated Guide* (2014), published by the UK's Association of University Chief Security Officers (AUCSO).

As this, and any good guide will confirm, establishing and resourcing the plan, and preparing the team to execute it are key steps towards a successful outcome. Identifying leadership roles and delegation of authority by the university executive to those leaders to manage all aspects of an emergency, along with training and test-loading the crisis management team and university executive will help to gain consistently better outcomes.

Communications at Virginia Tech in 2007

From the vantage-point of 2015 where more than 90% of students have smartphones and Facebook, Twitter and Instagram are embedded in the social fabric of every campus, the environment at Virginia Tech (VT) on April 16, 2007 seems almost Dickensian. However 90% of VT students had SMS-enabled mobile phones and the university was installing an SMS messaging system. Even so, the key findings of the Report by the Review Panel into Mass Shootings at Virginia Tech[2] included the following key recommendations, which should still apply today:

Chapter II. UNIVERSITY SETTING AND SECURITY - Recommendations

II-6   Campus emergency communications systems must have multiple means of sharing information.
II-7   In an emergency, immediate messages must be sent to the campus community that provide clear information on the nature of the emergency and actions to be taken
The initial messages should be followed by update messages as more information becomes known.
II-8   Campus police as well as administration officials should have the authority and capability to send an emergency message.
Schools without a police department or senior security official must designate someone able to make a quick decision without convening a committee.

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[2] Report by the Review Panel into Mass Shootings at Virginia Tech - http://scholar.lib.vt.edu/prevail/docs/April16ReportRev20091204.pdf

Therefore now, as in 2007, the key lessons are to:

- Train and test frontline staff and executives in their roles during critical incidents
- Utilise all available communication channels
- Send messages fast without waiting for committee approval
- Tailor content to ensure relevance to different audiences
- Ensure that recipients know that the message is genuine and how to act on it immediately.

Reputation

A public relations (PR) crisis communications plan is essential to scope multi-layered message management for each stage of an emergency situation. It should address different levels of communication to those directly impacted by the event, students, staff, their families and the media (social, broadcast and print) plus relevant stakeholders, opinion formers and influencers on a need-to-know basis.

Those responsible for delivering crisis PR must be identified, trained and regularly engaged in simulations to hone their skills. PR support systems during a crisis will include media and message monitoring, including analysis of all news coverage and social media chatter as the event unfolds.

AUCSO's Resilience in Higher Education Guide

In the United Kingdom, the Association of University Chief Security Officers (AUCSO) began researching best practice in emergency management for higher education institutions in 2007, publishing its first Good Practice Guide in 2008.

AUCSO also developed an emergency management course for its members and other HE managers and, supported by the government's Emergency Planning College, has delivered this course many times over the past eight years. In 2014 the course and the guide were reviewed and re-published as Resilience in Higher Education[3]. During these courses it is heartening to hear that emergency management and business continuity are being taken seriously by HE strategic managers to ensure the security, safety and welfare of students, staff and visitors, but there are still issues to resolve and improvements to make.

It is very encouraging to see that CriticalArc has researched this very important area of work. AUCSO agree that this form of mass communication is a vital action to be considered in any incident, and will support any research that helps to inform our University communities of an incident in a fast and efficient manner."

- BERNADETTE DUNCAN MBE FRSA MBCI MINSTLM CHIEF OPERATING OFFICER, AUCSO

The training of staff in response, the ability to communicate quickly and effectively with the campus community and to continue to deliver teaching, research and exams and other critical activities are vital following an emergency.

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[3] AUCSO: Resilience in Higher Education – an updated Guide (2014) - http://www.aucso.org.uk/files/custom_files/resilience_in_higher_education_institutions_1_.pdf

The path ahead

Higher education institutions have no greater priority than fulfilling their duty of care to students, staff and other campus users. The better prepared a university is to deal with a major incident that could affect the wellbeing of its constituents, the sooner it can respond, recover and reduce the long-term impact on day-to-day operations.

Embedding risk and emergency management procedures and crisis communications capabilities into routine security training and operations can without doubt, significantly reduce vulnerability.

Emergency planning requires a serious commitment by the organisation to develop and implement appropriate measures, however recent advances in mobile communications technology are now helping to minimise the overheads while maximising the opportunity to achieve a positive outcome from any emergency.

Next generation emergency management

Three key advances in technology are enabling the next generation of emergency management practice:

- ⌐ Global uptake of smartphones to near ubiquitous levels

- ⌐ Accessibility, reliability and speed of cloud-based mobile computing solutions

- ⌐ High-availability communications channels that can connect people worldwide.

Smartphones and mobile distributed command and control

By 2020 there will be 6 billion smartphones in use globally[4], with penetration already at 80% or more on many higher education campuses. Institutions can leverage the prevalence of smartphones together with the latest cloud-based distributed command and control solutions (DCC) to support emergency response operations and ensure business continuity.

By leveraging investment in fixed security infrastructure and human resources, DCCs offer the opportunity to dramatically improve incident response without further capital investment. By combining a comprehensive situational awareness system for response teams with a smartphone app for students and staff, a DCC can extend the reach of first responders with transformative effect.

In addition, cross-functional university staff such as human resources, student services and facilities management can be drawn into the incident response easily, as well as building wardens, first aiders and volunteers.
The mobile nature of distributed command and control enables incident controllers to direct operations from the field while facilitating collaboration with the emergency services and other third-party agencies for fast, informed decision-making.

[4] GSM Association: 2014 Global Mobile market intelligence - http://www.gsma.com/newsroom/press-release/smartphones-account-two-thirds-worlds-mobile-market-2020

Coordination in the cloud

Recovery and return to business as usual after a major event like flooding or earthquake can take months or even years when many buildings are affected, especially those covered by heritage regulations. By supporting a risk-based priority order, a DCC approach ensures that leaders can coordinate all efforts and direct responders efficiently. In doing so, universities can minimise personal risk and injury, limit wider damage, maximise up-time, shorten time to fully restored operations, improve business continuity and lower exposure to insurance claims.

Through a more highly coordinated response, universities are also better able to safeguard physical assets that may be spread across a large campus or dispersed across multiple sites.

Using a subscription model with service level agreements, cloud services offer numerous benefits without the overheads and commitment tied to traditional licensed software or owned-infrastructure. The vendor takes all responsibility for managing, operating, securing and supporting the system – ensuring ongoing compliance with regulatory requirements. This means universities need no additional dedicated in-house IT infrastructure or resources, enabling rapid system implementation.

Mass communication made simple

The DCC model overcomes many of the communication issues that have historically proved so challenging. The use of an app on staff and student smartphones allows response teams to share alerts quickly and effectively without the cost or reliability issues associated with SMS. Depending on the nature and severity of the threat, messages can direct recipients to situational report pages for detailed instructions and live updates. Additional lone worker check-in and man-down features enable response teams to locate and protect staff and students working alone, while keeping those that may be working at home or off-site informed.

Combining messaging with user check-in, supports rapid activation of large teams of volunteers and staff to extend available resources, while giving core team members unprecedented visibility of all members of the extended response team in order to optimise deployment. Mass communications targeted at specific user or skill-groups ensures that efforts can be directed consistently and cohesively towards resolution and recovery.

Example: Floods in the United Kingdom

Following the wettest December-January on record, a number of UK universities that were affected by floods in 2014 had to get their research and learning facilities back up and running fast. Emergency plans supported business continuity, however, communication proved cumbersome, leaving confusion as to which parts of the estate were fully operational.

Had they been equipped with a DCC, the universities could have alerted every staff member and student to the latest situation, advising on the location of lectures and any continued health and safety risks. At the same time, managers could have targeted messages at specific groups and departments to ensure the early resumption of business as usual. Furthermore, comprehensive data capture and incident recording could have supported regulatory compliance and reporting, providing audit trails for insurance and forensic investigation, debriefing and future team training.
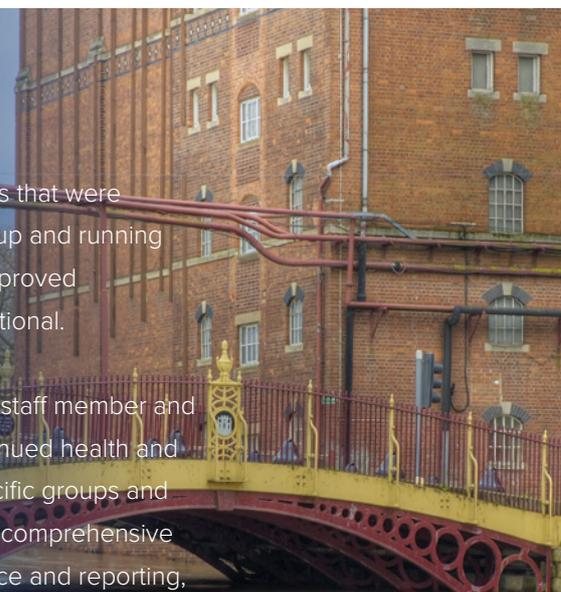
The SafeZone solution

SafeZone™ from CriticalArc is a leading example of how the mobile DCC approach is transforming emergency management practice in the higher education sector. SafeZone, a cloud-based managed software service, uses location intelligence to give response teams a complete situational view by automatically sharing all relevant incident details in real time.

As part of the service, the free SafeZone app enables students and staff to raise an alert or ask for help with a single tap on their phone. App users are registered so that when they raise an alert, responders have information about their identity, specific need and location – overcoming language issues and other potential barriers to incident reporting.

SafeZone Command

Full situation awareness
- Activate teams
- Monitor lone workers
- Targeted messaging

SafeZone OmniGuard
- Respond, Collaborate
- Share the common operating picture

Students or staff working alone, for example, late at night in a faculty building, can use SafeZone to check-in, making the security team aware of their presence – which can prove invaluable during after-hours emergencies when there are no building wardens to aid with incident management or an evacuation.

The check-In function, when used in combination with the system's mass-messaging capability, lets an incident controller activate and manage hundreds of volunteer staff in support of the professional response team – making large scale multi-disciplinary response management much more efficient.

Emergency-enable your campus

With campus environments becoming more complex and resources shrinking, SafeZone is a proven, cost-effective solution that overcomes many of the challenges in emergency management. It facilitates effective leadership, command and control and enables robust, timely communication with teams and mass audiences, while helping to optimise the use of all available resources.

SafeZone can enable a small team of professional responders to leverage the power of hundreds of wardens, volunteers and other staff during a critical incident. The solution can help to ensure that instructions are clear and unequivocal, any evacuation is rapid and complete, feedback is timely and actionable, and the entire response effort is repeatable, seamless, efficient – and auditable.

Flexible, scalable and equipped with multiple features, SafeZone helps the emergency management team to minimise the potential impact of an emergency without the need for additional capital investment, so in turn improving operational productivity and creating wider value for the university.

Benefits include:

- Comprehensive live situation awareness for leadership teams and all responders

- Optimised coordination with security teams, third parties and emergency services

- Accurate, timely intelligence for response teams as an incident unfolds

- Targeted mass-communication to different audiences

- Large-scale multi-skill response team activation and oversight

- One-click alerts from those needing help without language or other barriers

- Lone and out-of-hours workers on campus can share their location and status with campus security team, enabling more effective patrol coverage and faster evacuation in emergency

- Comprehensive data capture for full reporting, compliance and continuous improvement

- An invaluable asset for training and rehearsing emergency management scenarios

- Minimal disruption to business continuity, enabling faster recovery to business-as-usual

- Demonstrable commitment to duty of care of student and staff safety – safeguarding trust, credibility and reputation.

SafeZone in action – Emergency Notification Alert System at CQUniversity, Australia

CQUniversity, Australia's largest regional university, is based in Central Queensland and operates more than 20 campuses and learning centres spread across the whole country. The university set out to establish an Emergency Notification Alert System (ENAS) to notify staff, students, contractors and visitors on any CQUniversity location of an emergency situation that required action, without installing major infrastructure such as alarm/public address systems on each campus.

"*CQUniversity is serious about the health, safety and welfare of our more than 30,000 students and 2,000 staff and because if this we identified a strong need to find a solution that would allow us to connect with them quickly and easily during an emergency, such a severe weather event or critical incident*", said Professor Scott Bowman, President and Vice Chancellor, CQUniversity.

"*Likewise, we also wanted that same solution to provide staff and students with the ability to alert our security and safety teams of an unfolding emergency or to call for help or first aid if they felt their safety was compromised*", added Professor Bowman.

The university's solution was to establish an Emergency Notification Alert System (ENAS), embedded into current CQUniversity systems and processes, as a fully integrated system that united separate systems and notified people at CQUniversity through a multitude of channels - a world first!

Integrating CriticalArc's SafeZone with Atea (emergency paging via CISCO phones), Whispir (SMS, Voice and Email) and Hootsuite (Social media), ENAS is accessed via SharePoint from mobile devices so that in an emergency, a security officer can activate an alert to single or multiple campuses or the entire University network with a single "Red Button" click.

"*Using CriticalArc's programming interfaces, CQU's IT department has now integrated SafeZone with our Cisco phone system and other third party components to give CQUniversity a comprehensive, one-stop means for emergency communications that simultaneously uses multiple channels to deliver alerts and guidance during emergencies to our students and staff at all of our campuses and delivery centres across Australia.*" said Alastair Dawson, Vice President and Deputy Vice-Chancellor, International and Services.

CQUniversity is seen as a benchmark leader for how universities should engage with their communities. Keeping the university safe and informed during an incident is important and with the implementation of the ENAS, CQUniversity has taken another step forward in ensuring staff, students and contractors are safe while at work or study.

The university has seen successful student and staff uptake of SafeZone, with direct promotions to students and a rolling campaign of departmental staff briefings via teleconference across multiple campuses. Tailor-made instructional videos on SafeZone have been loaded onto the university's OH&S portal, Youtube and web site. There is still a way to go before CQUniversity can be confident that the majority of community members have registered for SafeZone, and its introduction will continue to be a feature of all student, staff and contractor inductions.

'*We see our integrated ENAS as leading edge in terms of emergency preparedness. It effectively supports our professional response team and the many volunteers that work as wardens and first-aiders and greatly reduces any potential security or safety risks to our people*," said Professor Bowman.

Extract from CQUniversity ENAS Case Study, July 2015
Central Queensland University (CQUniversity), Australia **www.cqu.edu.au**

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About CriticalArc

A global technology innovator, CriticalArc designs and delivers the distributed command and control solution, SafeZone™, which is revolutionising the way organisations manage security operations. Deployed in hours, SafeZone combines complete situational awareness with the mobile control needed for an efficient and coordinated response to incidents from every-day processes and events through to full-scale emergencies. Headquartered near Sydney, Australia, CriticalArc has offices and operations in the USA, UK and Middle East providing an international delivery capability and reach.

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