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The pros and cons of using SMS in an emergency

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SMS is the perfect emergency communications channel, right? People always have their phones with them, especially in an emergency; you can easily send one message to a number of people; and you can text when you can't talk.

Indeed, just over an hour after the earthquake in Christchurch struck earlier this year, Vodafone New Zealand sent out the following message: "There is heavy congestion on the network and we encourage people to text rather than call in order not to overload the network and to preserve their phone's battery life."

In many countries, SMS is even being considered by the authorities as an alternative emergency channel which the public can contact, equivalent to 911 in the U.S. and 10111 in South Africa.

On the other hand, a 2008 report from **3G Americas** notes that there are serious limitations on using SMS for emergencies, especially in the form of third party Emergency Alert Systems (EAS). When sending out communications these limitations include: that cellular networks have not been designed to cope with emergency-scale traffic volumes via SMS, targeting users by location is difficult, and there is no way to authenticate a message.

So which is it? Does SMS have a critical role to play in emergency communications or not?

I'd argue that of course it does, but only with careful planning and understanding that there is no one-size-fits-all solution.

There is no denying that having access to more information during a crisis is a good thing. Take a look at the real-time information the world received of the earthquake in Japan earlier this year and the orderly way in which the Japanese population has responded to the disaster. Compare this to the 1923 Great Kanto earthquake in Tokyo, where rumours circulated that Koreans were taking advantage of the situation, committing arson and robbery. This unfortunately resulted in xenophobic attacks by the Japanese on the Koreans because there was no way to verify or refute the word-of-mouth information or to share accurate information. The importance of obtaining and providing accurate information following natural disasters has been emphasized in Japan ever since.

For the reasons mentioned above, SMS should certainly be included in any emergency communications plan, both for communicating with the general public, as well as with the media and volunteer emergency responders. Depending on the nature of the emergency, however, SMS should be used as appropriate to the situation.

When in a disaster it is critical that unnecessary load on a network is reduced to allow critical communications to get through. A person trapped should not get a 'network busy' signal when trying to alert rescuers to his/her location.



For instance, in the wake of the 2007 Virginia Tech shooting, the university realised that the shootings took place over a two-hour period and more should have been done to keep students away from the campus. After the event, a number of third-party SMS services were touted as the answer to the problem. But in a geographically concentrated area an attempt to SMS all students and staff would have congested the single cell tower covering the area, preventing vital information from being transmitted.

In a case such as this one, a system of tiered communication would need to be set up, perhaps informing faculty heads, heads of residences and other community leaders, who could then pass the information on via other channels. Students and those affected should be told to SMS a single family member outside the area who can then pass the message on.

During a more geographically dispersed event, it would be more feasible to communicate with larger numbers of people and also target the people in immediate danger, for instance during a flood or wild fires. Load testing should be done to understand the capacity of the network when using a third party EAS and these services should certainly not be blindly bought without careful consideration. This sort of planning does not take place in the middle of an emergency though, and preparation and education should be done for both man-made and natural emergencies.

Don't forget to combine SMS with other channels though. Twitter especially has proven its value during a crisis, both in terms of keeping the media up to date with what is happening on the ground and alerting rescue services to people in danger. A year ago Haitian DJ Carel Pedre famously saved the life of a buried earthquake victim by tweeting his location, which was picked up by rescue teams monitoring Twitter.

Cell broadcast technology is another channel to consider adding to the mix. The US will launch a pilot service in New York and Washington later this year that sends messages to subscribers within a certain area via this technology. Although limited by handset and network operators, this is a good way to quickly reach a group of people within a specific area in an emergency. Unlike an SMS, the message is delivered to the handset's screen. In addition, cell broadcast technology uses very little bandwidth. However it does not allow inbound messaging or responses.

In conclusion, as with so many technical solutions to human problems, there is not a silver bullet solution to EAS. But neither does it make sense to dismiss SMS as an important component of an effective, carefully planned, emergency communications strategy.