

THE UTILISATION OF MOBILE APPLICATIONS AND SOCIAL MEDIA AT CRISIS PREVENTION AND MANAGEMENT. GOOD PRACTICES FROM HISTORIC EVENTS

Konstantinos Chouvardas¹, Athanasios Nalmpantis²

^{1,2} Civil Protection Directorate, Region of Eastern Macedonia and Thrace, (Greece).

E-mail: civilprotection@pamth.gov.gr

ABSTRACT

The aim of the paper is to analyze the possibilities for the use of social media in the management of natural disasters and to propose basic guidelines for organizing communications and data exchange between the participants in such events. Social media might well enhance systems of communication, thereby substantially increasing the ability to prepare for, respond to, and recover from events that threaten people and infrastructure. Social media cannot and should not supersede current approaches to disaster management communication or replace existing infrastructure, but if managed strategically, they can be used to bolster current systems. Therefore, the utilization of the social media by first responders and governmental agencies prior to and during disasters, are highly recommended

Keywords: social media, crisis management, mobile apps

1. INTRODUCTION

A natural disaster is the effect of a natural hazard (e.g., flood, tornado, hurricane, volcanic eruption, earthquake, heatwave or landslide). It leads to financial, environmental or human losses. Natural disasters come without warning and they take lives of tens, hundreds and thousands of people. The resulting loss depends on the vulnerability of the affected population to resist the hazard, also called their resilience. If these disasters continue it would be a great danger for the earth. This understanding is concentrated in the formulation that disasters occur when hazards meet vulnerability.

The term "social media" refers to Internet-based applications that enable people to communicate and share resources and information. The emergence of this new communication channels represents an opportunity to broaden warnings to diverse segments of the population in times of emergency. These technologies have the potential to prevent communication breakdown through reliance on just one platform and thereby to reinforce the diffusion of warning messages but also present policy makers with new challenges.

2. MAIN PART

The use of social media for emergencies and disasters on an organizational level may be conceived of as two broad categories. First, social media can be used somewhat passively to disseminate information and receive user feedback via incoming messages, wall posts, and polls. A second approach involves the systematic use of social media as an emergency management tool. Systematic usage might include: 1) using the medium to conduct emergency communications and issue warnings; 2) using social media to receive victim requests for assistance; 3) monitoring user activities and postings to establish situational awareness; and 4) using uploaded images to create damage estimates, among others.

Research and reviews of different cases has identified the four primary ways that citizens use social media technologies during natural disasters:

- Family and Friends Communication - To connect with family members between affected and unaffected communities/areas (or within affected communities) for situation updates and planning responses. This is the most popular use. Primary tools used are Twitter, Facebook and/or a blog.

- Situation Updates - Neighbours and communities share critical information between each other such as; road closures, power outages, fires, accidents and other related damages.
- Situational/Supplemental Awareness - in a number of cases citizens rely less and less on authority communication, especially through traditional channels (television, radio, phone.)
- Services Access Assistance - Citizens would use social media channels to provide each other with ways and means to contact different services they may need after a crisis.

Before a disaster social media can help people better prepare for a disaster and understand which organizations will help their communities [1]. During the disaster social media helps users communicate directly to their families, reporters, volunteer organizations and other residents and immediately share information. It also controls rumours because it's easier for organizations to validate facts. After the disaster, social media helps bring the community together to discuss the event and share information, coordinate recovery efforts and get information about aid. The use of social media for disaster preparedness has two components:

- As an effective means for providing updated information about a crisis, proactive steps must be taken prior to disasters in order for effective communications to occur.
- As a part of crisis observation, managers should be monitoring social media platforms and channels that may be relevant to their organization. Observing can be as simple as conducting regular searches and analyses of media platforms for keywords and phrases that may imply an emerging crisis or disaster. Monitoring of social media should extend into the crisis response and post-crisis phases to check how crisis management efforts are being received. Many researchers propose three ways to use social media during natural disasters:
 - Preparing for a natural disaster - though no one can predict an earthquake day in advance, social networks such, email and text messaging could help people prepare for the emergency.
 - Responding during and immediately after the natural disaster - this is especially the case for SMS messages and other communications that can be received through cellphones.
 - Recovering from the natural - communication is done through social media.

During recent historical events the use of mobile applications and social media networks is characterised by extremely remarkable features, as in following cases:

1. During the Boston Marathon Bombings, the Boston Police Department made terrific use of hashtags [2]. They clearly had a hashtag strategic plan in place, and used social media for media alerts, news conferences, as well as information request from the Boston community.
2. Following the Boston Marathon bombings, one quarter of Americans [3] reportedly looked to Facebook, Twitter and other social networking sites for information, according to The Pew Research Center. The sites also formed a key part of the information cycle: when the Boston Police Department posted its final "CAPTURED!!!" tweet [4] of the manhunt, more than 140,000 people retweeted it. Community members via a simple Google document [5] offered strangers lodging, food or a hot shower when roads and hotels were closed. Google also adapted its Person Finder [6] from previous use with natural disasters.
3. During the hurricanes that have hit the U.S. the use the application Zello (free push-to-talk walkie talkie app) has risen in popularity among emergency responders in the wake of the number of hurricanes that have hit the U.S. the last several years. As Hurricane Florence battered the Carolinas, several emergency channels were set up on Zello to allow people to request help. One of the channels was being operated by the Cajun Navy, a group of civilian rescuers that often travels to disaster areas to help execute rescue and recovery operations.

Drawing up an effective social media strategy and tweaking it to fit an emergency, however, is a crucial part of preparedness planning.

For the Boston Marathon incident, no consistent hashtag on Twitter could be found, which can make tracking relevant information difficult. Even searching for the word "Boston" would have fallen short, because it could

lead to unrelated matter like Boston tourism or fail to capture relevant tweets that did not include the word Boston.

Nevertheless, the tendency to sensationalize news that is inherent in human nature, basic information may get disproportionately misconstrued as a result of which rumours are created, misleading people with regard to ongoing activities. In the process, there is a loss of confidential information and victims may fail to be notified about revised safety measures. Eventually the lack of constant flow of communication can result in chaos and confusion. Critical tasks that can be implemented by social media include:

- Prepare citizens in areas likely to be affected by a disaster;
 - Broadcast real-time information both for affected areas and interested people;
 - Receive real-time data from affected areas;
1. Mobilize and coordinating immediate relief efforts; and
 2. Optimize recovery activities.

Concerns such as the threat of technology failure, hackers, stalkers, viruses, flaming, and usability issues will have to be addressed in the development of emergency online networks. Current social networks have limitations in terms of the collaborative tools available to users that might be repurposed for emergency use, especially given as they were generally designed with socializing rather than emergency efforts in mind. Nevertheless, within a short time, even the most enhanced system will seem primitive as user requirements mature and develop in all areas. Systems will ultimately emerge that allow true collaboration and have complete user control. When developing the use of online social networks, it is essential to engage emergency management personnel and their organizations in dialog to determine their concerns, needs and how to serve them in the best feasible manner.

3. CONCLUSIONS

Social media has re-defined communication in today's modern world. Text messaging, the internet and social networking sites have made it possible to communicate with a large number of people anywhere on earth. It is an efficient and easy way to keep in touch and impart information, particularly in a time of crisis. The Internet has become an essential communication network during this time. With thousands displaced from their homes and many having fled the disaster zone, people turned to social networking sites to contact friends, post photos and share stories. Social Media has become a valuable means of communication in many places affected by a natural disaster [7], which allows people to keep in touch with family and friends and access important information. Social media cannot and should not supersede current approaches to disaster management communication or replace existing infrastructure, but if managed strategically, they can be used to bolster current systems. Now is the time to begin deploying these innovative technologies while developing meaningful metrics of their effectiveness and of the accuracy and usefulness of the information they provide. The present paper illustrated how combining social media applications with voice applications such as Zello has been proven to help disaster management. Additionally, the possibility of automating IoT devices by updating groups on social media is highlighted.

Social media might well enhance systems of communication, thereby substantially increasing the ability to prepare for, respond to, and recover from events that threaten people and infrastructure. Therefore, the utilization of the social media by first responders and governmental agencies prior to and during disasters, are highly recommended.

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