A Framework to Identify Best Practices: Social Media and Web 2.0 Technologies in the Emergency Domain

Connie White, Jacksonville State University, USA
Linda Plotnick, Jacksonville State University, USA

ABSTRACT

Social media is used in a variety of domains, including emergency management. However, the question of which technologies are most appropriate for a given emergency remains open. We present a framework of dimensions of emergencies that can assist in selecting appropriate social media for an emergency situation. Social media is not a panacea but can be used effectively given the proper functions available from the particular services provided by each of the Web 2.0 technologies available. The main objective of this article is to identify the best practices for social media to leverage its ability given the complexities that coincide with events. This is a conceptual article based on the results of preliminary studies involving group interactions with emergency professionals with various backgrounds. In addition, emergency management students who are professionals in the field followed by another interview soliciting information from information systems scientist were surveyed. We found that each situation called forth various dimensions where only sub phases of the stated dimension may be used given the task type derived from the event characteristics. This lays a foundation upon which a more formal approach can be taken to help tame the social media mania into a manageable set of ‘best practices’ from which emergencies can be managed more effectively given Web 2.0 technologies and social collaborative online tools.

Keywords: Best Practices, Cases, Emergency, Framework, Implement, Management, Media, Social

INTRODUCTION

Social media has been used by the public for a number of years to link people together but more recently, has also been identified as playing a role in aiding communications for emergency management (White, Plotnick, Kushma, Hiltz, & Turoff, 2009). Emergency management stakeholders have begun to experiment and explore possible uses that can help support and expedite the diverse needs of various stakeholders (Plotnick, White, & Plummer, 2009). The United States government has acknowledged the potential use of social media for communications as a serious tool to use to help manage day to day operations (Collins, 2009). In mid-2009,
the Department of Homeland Security Office for Interoperability and Compatibility, Office of Emergency Communications, FEMA National Preparedness Directorate and the Center for Homeland Defense and Security hosted “The Ogma Workshop: Exploring the Policy and Strategy Implications of Web 2.0 on the Practice of Homeland Security” (Federal News Radio, 2009) which explored these issues. Although this use is catching on and its use confirmed by the workshop participants, after conducting a broad but non-exhaustive literature review, we found no studies conducted testing the effectiveness of attempts to reach various goals sought by these departments. We found little guidance for such efforts in general, either. There are only a handful of lessons learned where others can mimic particular uses of these Web 2.0 technologies and with confidence in their effectiveness. “The learning, in this case, is from those on the front lines already using the technologies, says Essid” (Federal News Radio, 2009).

“Best practice” is a term used by emergency management professions and is defined as “a technique method, process, activity, incentive or reward that is believed to be more effective at delivering a particular outcome than any other technique, method, process, etc. The idea is that with proper processes, checks, and testing, a desired outcome can be delivered with fewer problems and unforeseen complications. Best practices can also be defined as the most efficient (least amount of effort) and effective (best results) way of accomplishing a task, based on repeatable procedures that have proven themselves over time for large numbers of people” (Wikipedia). We identify a set of dimensions that, together, identify the numerous unique states that can exist given an all hazards approach to comprehensive emergency management. From these dimensions, a framework is created that describes the situations which can then be used to identify the appropriate social media to use for that situation.

The dimensions of an emergency situation identified that need to be considered when choosing social media are: the size of the event; the phase of the emergency; the stakeholders and level(s) of government involved; social convergence; time phases; and spatial zone (geographic area impacted). Each of these dimensions needs to be considered both alone and in concert with the other dimensions. For example, it is insufficient to merely identify the stakeholders involved when selecting social media. The phase of the emergency, for example, will also influence what media are feasible to use as infrastructure integrity may vary depending upon the current phase.

This work is important because it gives a foundation upon which social media can be strategically identified for particular uses. The level of security of the data may be an important factor or not, depending upon the situation. This type of information, when analyzed against the needs provided in the dimensions identified, helps guide which technology best fits the present state. But questions remain: what are they really good for, how do you reach your target market, and how do researchers go about considering when these systems will prove effective or possibly destructive? Workshop hosts stated that prior to the Ogma Workshop, “We came across a lot of good examples of, say, YouTube for example, and the Division of Emergency Management in Florida uses that to do staff situational reports. FEMA has established Twitter accounts to send out updates. In Washington DC, they monitored Twitter and Facebook during the Inauguration to see if there was situational information that they weren’t obtaining through their more formal sources” (Federal News Radio, 2009). There is such an explosion of growth in social media usage that it’s premature to try to predict the future. While social media has been adopted for uses that benefit society, other uses are possible as well. The dark side of social media is raising its ugly head as terrorist groups are finding the same benefits as others in its use (Lamoreaux, 2009) and cyber attacks have proven numerous lately (Government Computer News, 2009).

We describe how the literature and workshop discussions inform the identification of dimensions of an emergency that can guide
Current State and Solutions for Future Challenges in Early Warning Systems and Alerting Technologies
www.igi-global.com/chapter/current-state-solutions-future-challenges/44847?camid=4v1a

An Approach to Using Ontologies for the Development of High Quality Disaster Recovery Plans
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