Chapter 3

Building Community Resilience through Social Networking Sites: Using Online Social Networks for Emergency Management

Miriam S. Belblidia
University of Pittsburgh, USA

ABSTRACT

Online Social Networking Sites (SNS) enable collaborative information sharing and help build resilient communities in areas exposed to risk. This paper reviews existing research on community vulnerability and resilience, and explores the role of communication in fostering strong community networks. The paper draws upon examples of SNS used to share information and explores how such technology may be leveraged more effectively to provide communities with robust communication networks, thereby creating more resilient communities in areas at high risk of natural disasters.

CONTEXT

The use of SNS sites, such as Facebook and Twitter, has grown exponentially in recent years (Golbeck, 2008a; Shneiderman & Preece, 2007), as people build Internet-based networks that reflect their own communication networks (Manjoo, 2009). As the number of users grows and the functionality of these networks expands, SNS have emerged as a practical tool for use in emergency management (White et al., 2009).

As the nation watched the rising river threatening Fargo on March 28, 2009, President Obama called attention to this utility, “young people have turned social networks into community networks, coordinating with one another online to figure out how best to help” (Obama, 2009). Similarly, citizens have used internet networks...
in past emergencies. In the 2005 aftermath of Hurricane Katrina, with Gulf Coast evacuees scattered throughout the country, websites like KatrinaPeopleFinder and Katrina Wiki emerged to help locate friends and family (Gertz, 2005). As Hurricane Gustav threatened New Orleans in 2008, a “Hurricane Gustav Digital Support Brigade” group was launched to share information and coordinate volunteers (Carvin, 2008). During the 2008 terrorist attack in Mumbai, residents used Twitter to keep one another informed as the crisis developed (Caulfield & Karmali, 2008).

Such examples of SNS use demonstrate the capacity for use in emergencies. Emergency managers are increasingly turning to online networks in order to communicate with their constituents. The Federal Emergency Management Agency (FEMA) now uses YouTube, Twitter, and Facebook to share information with the public (FEMA, 2009) and the Centers for Disease Control (CDC) is linked to Twitter, Facebook, MySpace, and DailyStrength (CDC, 2009). While these moves represent progress, early warning systems often remain hierarchical in nature, with emergency managers sharing information down to the public (Botterell & Addams-Moring, 2007). An exciting component of SNS is their ability to “flatten” emergency communication by allowing information to be shared not only from the top down, but also from user to user and from the ground up to emergency officials. Such communication, facilitated by SNS, more closely resembles the “flatter, more dynamic, ad-hoc organization that emerges during post-disaster relief efforts” (Manoj & Hubenko Baker, 2007, p.52).

By facilitating resident-to-resident communication, SNS also have the ability to strengthen community networks. Collaborative engagement of local citizens through SNS would serve emergency managers well, as citizens are often informal “first responders” in disasters (Palen, Hiltz, & Liu, 2007). Before technologies such as SNS can be effectively used for emergency management, it is necessary to understand community networks, vulnerability and how to build resilience within these vulnerable communities. If leveraged properly, Social Networking Sites represent a valuable tool to reduce vulnerability and increase resilience within communities.

**RESEARCH QUESTION**

For the purposes of this paper, Social Networking Sites are defined as any web-based applications that allow individuals to connect, communicate, and collaborate with one another. This is usually done through individual user profiles and allows users to share information and join networks based on geographic location or interests (White et al., 2009). By linking friends, families, co-workers, and acquaintances, SNS are able to reinforce communication networks and transmit critical information.

The utility of Social Networking Sites for emergency management comes from their potential ability to create more resilient communities in areas at high risk of disasters. The central research question of this paper is whether SNS facilitate collaborative action at the community level by strengthening communication networks and enabling communities to self-organize more effectively, thereby reducing their risk. This represents an extension of the use of SNS by emergency managers to communicate critical information and may yield more effective results in producing resilient communities. By using SNS to collaborate and strengthen community networks, these sites have the potential to reduce vulnerability within communities.

This research began with an extensive review of existing literature, using a snowballing technique to cull further sources. While focused primarily on emergency management literature, sociology, computer technology, and psychology literatures were also drawn upon. The research was then organized around significant themes: technology, vulnerability, resilience, social organization,