Fire, Wind and Water:
Social Networks in Natural Disasters

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EXECUTIVE SUMMARY

This case examines the issue of increasing adoption of Social Networking Technologies (SNTs), particularly microblogging, for emergency management practices during natural disasters. It discusses the technologies and how they are an integral part of information transfer for citizens in the geographic region affected by the natural disaster. This case presents the progression of how SNTs have been used during and in the aftermath of natural disasters in Australia between 2009 and 2011; these events are used as 'organization' for the paper. Accurate and timely information during natural disasters is essential in providing citizens with details about whether they should stay or leave an area. Traditionally, information was provided through television and radio broadcasts; however, these types of communications were one-way and only allowed for the push of information to citizens. SNTs are being used by the media and emergency organizations to provide information to citizens. These technologies are dynamic in their approach, allowing for knowledge sharing of all parties involved.

Keywords: *Community Informatics, Emergency Management, Media, Mobile Computing, Natural Disasters, Social Networking Technologies*

ORGANIZATIONAL BACKGROUND

There is a critical need for information when a disaster occurs, and it is important for this information to be targeted at the needs of the affected citizens, organizations and/or governments. Typically, a specific organization is used as the case study for review of the challenges and problems that face the case study, however instead of focusing on one organization this case focuses on using the major natural disasters in Australia between January 2009 and February 2011 as the case study. This allows for greater research into the phenomenon of how society as a whole has (over that short period of time) accepted the use of SNTs, particularly for emergency management and providing information.

It has been stated that natural disasters are one of the major problems facing society (Strömberg, 2007). As they are indiscriminate they affect all citizens, organizations and governments combined in a geographic area and have the potential to lead to loss of life, economic loss and environmental damage. Natural disasters include: floods, fires, earthquakes, low-pressure storm systems (cyclones, typhoons and hurricanes), tornadoes, tsunamis and landslips. To minimize

DOI: 10.4018/jcit.2011040105

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the effects of natural disasters, citizens in the vicinity of an event are given essential information about their situation for decision making purposes, and the best strategies to avoid harm. Thus the information provided is vital for connecting people and aiding in their decision making processes.

Strömberg (2007) stated that worldwide research of natural disasters between 1980 and 2004 had found that two million people have been killed; five billion people have been affected by the reported 7,000 natural disasters. When it comes to their economic impact in Australia, Crompton and McAneney (2006) state that Australia's historical average annual insured loss due to natural disasters is approximately AUS$1billion in today's monetary terms (historic data 1974-2006), with the worldwide effects of natural disasters constantly increasing.

Natural disasters create a mass emergency for the citizens, organizations and government in the geographic area affected by the disaster and these groups are provided with large amounts of information that they need to evaluate to make decisions on what are the best possible actions that they should follow. The three case studies that will be used for this research are: Victorian bushfires (2009) (bushfires are also known as wildfires in the United States and Canada); Queensland floods (2010/2011); and Tropical Cyclone Yasi (2011).

Victorian Bushfires

During the period of January – February 2009, there were a large number of bushfires that were burning throughout the state of Victoria in Australia. On February 7, 2009, extreme weather conditions were recorded in most of the state, with the media and the Country Fire Authority (CFA) of Victoria reporting up to 400 separate blazes. These fires led to the death of 173 people and 414 people were injured. This was Australia's highest ever death toll from a bushfire. A Royal Commission into the fires was conducted by the Victorian Government (http://www.royalcommission.vic.gov.au/). In their report, they stated that it was reported that AUS$1.2 billion worth of insurance claims were made for damage to property. In this natural disaster there was limited usage of SNTs in providing information to help the decision making processes by authorities. This was the first significant Australian natural disaster where the media and citizens took it upon themselves to provide information via SNTs gathered from traditional means (for example, media releases) to inform citizens about the bushfires.

Queensland Floods

During the period November 2010 – February 2011, parts of the state of Queensland were declared a disaster situation due to large amounts of flooding. On January 10, 2011, a flash flood affected the city of Toowoomba and by January 13 three quarters of the state was affected in some way with flood waters in Brisbane (the capital of Queensland). The death toll from the natural disaster was 35 people since November 30, 2010, with 22 deaths occurring after January 10, 2011. During this natural disaster SNTs were used heavily by the authorities, media and citizens in providing timely information about the natural disaster.

Tropical Cyclone Yasi

The third major natural disaster under review is Tropical Cyclone Yasi. Tropical Cyclone Yasi came in contact with the far north Queensland coastline on February 2, 2011. The cyclone was classified as a category 5 cyclone – the highest category that can be given to this type of storm system. The cyclone led to the death of one person. As this event occurred only two weeks after the floods that encompassed the south of Queensland, authorities had a strong understanding of the use of SNTs

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