Models of Social Media Adoption in Emergency Management Organisations

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ABSTRACT: *Recent natural disasters such as the Haitian earthquake 2011, the South East Queensland floods 2011, the Japanese earthquake and tsunami 2011 and Hurricane Sandy in the United States of America in 2012, have seen social media platforms changing the face of emergency management communications, not only in times of crisis and also during business-as-usual operations.*

With social media being such an important and powerful communication tool, especially for emergency management organisations, the question arises as to whether the use of social media in these organisations emerged by considered strategic design or more as a reactive response to a new and popular communication channel.

This paper provides insight into how the social media function has been positioned, staffed and managed in organisations throughout the world, with a particular focus on how these factors influence the style of communication used on social media platforms. This study has identified that the social media function falls on a continuum between two polarised models, namely the authoritative one-way communication approach and the more interactive approach that seeks to network and engage with the community through multi-way communication. Factors such the size of the organisation; dedicated resourcing of the social media function; organisational culture and mission statement; the presence of a social media champion within the organisation; management style and knowledge about social media play a key role in determining where on the continuum organisations sit in relation to their social media capability.

This review, together with a forthcoming survey of Australian emergency management organisations and local governments, will fill a gap in the current body of knowledge about the evolution, positioning and usage of social media in organisations working in the emergency management field in Australia. These findings will be fed back to Industry for potential inclusion in future strategies and practices.

Keywords: *social media, emergency management, business models, new media adoption*

Introduction

With the growing use of social media in recent disasters, such as the Haitian earthquake 2010 (Yates and Paquette 2011); the South East Queensland floods 2011 (Bruns et al. 2012); the 2011 Japanese earthquake and tsunami (Van Niekerk and Maharaj 2013); and Hurricane Sandy in the United States of America in 2012 (Haddow et al. 2014, 149), social media is now considered by Haddow et al. (2014, 148) to be "a critical and indispensable element in disaster and crisis communications."

This increased prominence of social media in disaster communications has led to the question of how the social media function has been adopted in emergency management organisations and whether it has emerged by considered strategic design or more as a reactive response to a new and popular communication channel. Investigation into the adoption of

social media in these organisations will enable the development of strategic models relating to the positioning, staffing and management of the social media function, resulting in better outcomes for the management and use of social media in both disaster and business-as-usual communications.

The Rise of Social Media

Over the past decade social media has infiltrated everyday life encompassing everything from connecting with friends, accessing news, creating videos to share publicly, through to expressing personal opinions and comments on television shows as they are aired. As Burgess and Banks (2014, 286) have argued, social media has now become "an embedded communications infrastructure extending across culture, society and the economy", from everyday personal use through to retail marketing, workplace and organisational communication functions.

Globally, it was estimated that one in four people accessed social media sites in 2013, representing approximately 1.73 billion people, up 18% from 2012 (*Social Networking Reaches Nearly One in Four Around the World* 2013). The Yellow Social Media Report, which looks into the social media usage of Australian consumers and businesses, has found that Australians have been strong social media adopters, with 65% of Australian internet users accessing social media in 2013 (Sensis 2013, 4). Facebook is the most popular social media platform, with 95% of Australian internet users accessing this site last year, followed by LinkedIn (20%), Instagram (16%), Twitter and Google+ (15% each). Not only has the popularity of using social media increased, the frequency of use has also grown, with 45% of Australian internet users accessing social media sites on a daily basis, a 15% increase since 2011. Mobile and portable devices such as smartphones (67%) and laptop computers (64%) are the most popular way for Australians to access social media sites. In the past two years, there has been significant growth in the use of smartphones (up 33%) and tablets (up 31%) to access social media, while access using desktop computers has decreased by 14% to 46% (Sensis 2013, 25-26).

While the proportion of Australian businesses with a social media presence is still less than the proportion of Australians using social media, there has been growth in this sector. In the two years from 2011 to 2013, the percentage of small businesses using social media has increased from 16% to 30%; medium-sized businesses from 22% to 47%; and large

businesses have experienced the biggest increase of 29%, from 50% to 79% (Sensis 2013, 53).

The adoption and usage of social media has also occurred quickly and within a relatively short timeframe. It took 13 years for television to gain 50 million users, whereas Facebook had 100 million users within 9 months (Patel 2010, 60). This rapid emergence, acceptance and usage of social media by the general population has occurred so quickly in comparison to other technology adoption, that organisations have had little time to understand and respond to this new form of communication. As Burgess and Banks have identified, while social media is becoming important across a number of sectors including government, business and not-for profit organisations, "most companies are still quite tentatively exploring how to use social media" (2013, 288).

Social Media, Emergency Management Organisations and Change

Social media is a powerful communication tool for emergency management organisations because that is where the growing majority of the community they serve gets news, information and socially connects. Emergency management organisations are now using social media for both disaster and normal day to day communications (Yates & Paquette 2011, 6). Lindsay (2011, 3-5) has classified emergency management social media communications into the following areas:

1. Community safety and crisis information throughout all stages of a disaster (i.e. prevention, preparedness, response and recovery);
2. Emergency alerts and warnings to the community;
3. Intelligence gathering for situational awareness, such as the community providing on scene reports of what is happening first-hand in disaster areas;
4. Notifications, such as providing information on training exercises to staff and volunteers;
5. Requests for assistance from the community by using social media as a supplementary channel to Triple Zero emergency calls; and
6. Recovery information through providing the community with information and links to other agencies who are able to provide assistance, such as where to obtain financial assistance after the disaster.

Among the changes social media has brought, there are three significant areas that are relevant to disaster communications namely, the emergence of citizen journalism, where user-generated content is being used as both a primary news source as well as supplementary content (Standley 2013, 132); the blurring of lines of communication, with the community now being an active participant in disaster communications, which was once the well-controlled responsibility of emergency management organisations to manage information and message flow during disasters (Shiel et al. 2011, 53-54); and the amplification of word of mouth communication, enabling one source to communicate quickly with many, across geographic boundaries (Qualman 2013, Chapter One: Word of Mouth Goes World of Mouth, Overview) and at minimal cost (Fisher and Reuber 2011, 2).

Citizen journalism, the opening up of the lines of communication and the ability to communicate quickly and inexpensively on mass with the community provides opportunities for emergency management organisations and local governments, such as harnessing the growing trend of user-generated content on mobile media to explore ways to source in near real-time on the ground observations and images to complement situational awareness reports to aid in disaster management decision-making. Also, greater exposure can be obtained for community safety messages through utilising social media to increase the reach and intensity of communications.

The perceived position is evidenced by the growing interest in this field by emergency management professionals attending conferences such as the Eidos Institute *Social Media in Times of Crisis Symposium* 2011 and 2013 and the Australian and New Zealand Disaster and Emergency Management Conference 2014, where whole conference streams have been devoted to social media; as well as the increasing number of newspaper articles citing the increased popularity of social media usage in various emergency management organisations around the world (*Queensland Police are Pioneers in Social Media* 2013; Chislett 2012; Brus 2012; Cowan 2010). Despite the increased attention social media is gaining, there is still some confusion about how, and to what extent, social media can be integrated into the emergency management environment, and with what benefits or impacts. While some emergency management organisations and local governments may feel enthusiasm and perhaps even some pressure to adopt social media, for others there may also be some reluctance and concern about using this new communication medium.

Social media brings about a new set of potential risks for organisations, such as posting misinformation (Larcker et al. 2012, 2), as seen during the 2013 Boston marathon bombings (Beck 2013); user-generated content that is perceived as trustworthy by other social media users but lacks verification, "editorial control and 'professional' oversight" (Crowe 2012, 47); hacking of official social media accounts (Suart 2013) and security breaches, such as personal employee information being made public and the possibility of exposing staff to potential harm (Griffin 2012, 3).   Reddick and Norris (2013, 499) suggest that governments may be reluctant to embrace this new technology because of the perceived loss of control and for emergency management organisations, this loss of control is in direct contrast to their usual command and control approach to emergency management (Anderson 2012, 3-4).

Information Technology and Social Media Adoption in Organisations

In the late 1980s, Zmud and Apple (in Cooper and Zmud 1990, 124-125) identified that information technology adoption in organisations was undertaken in various stages. Firstly a problem was identified and information technology options were scanned, looking for a potential solution. The catalyst for change came from either an identified need in the organisation, technological advances or a combination of both. The adoption process occurred after securing managerial support and was followed by the adaption phase, where the technology was then introduced into the organisation, procedures were developed or revised and staff training occurred. For the emergency management field, Bharosa et al. (in Latonero and Shklovski 2011, 4) proposed that an information expert is also required to act as mediator between the technology, information, organisation and intended audience.

The adoption of social media into government and organisations has taken a less structured approach. For governments, innovation in the use of information and communication technologies was traditionally driven by policy, political mandates or consultants who were hired to improve service delivery (Browne and Osborne in Mergel 2012, 283). However, as Mergel (2012, 284) has identified, the adoption of social media in many government agencies has occurred as a result of experimentation, either through the observation of social media use by stakeholders, other government agencies and organisations or by staff members, "so-called intrapreneurs, who were willing to test and experiment on third-party platforms outside officially sanctioned processes"(Mergel and Bretschneider in Mergel 2012, 284), with social media policy and guidelines following retrospectively (Mergel 2012, 284).

Further research undertaken by Mergel et al. (2012, 155-158) expands on this approach and introduces another two ways in which social media is adopted in organisations. The Early Adopter and Innovator pathway, where organisations seek to increase their visibility and be at the forefront of the market by using social media. This approach involves some element of risk taking, where there is freedom to experiment using social media, with the advantages of being competitive in the market far outweighing the more cautious approach of waiting to see what other organisations were doing. The other approach, known as Bandwagon Jumpers, is where an organisational decision to use social media is based on how many other organisations are using it rather than their own specific organisational need. While this approach is slower in pace, it is still considered by Mergel et al. (2012, 157) to be used by "highly innovative social media practitioners." This responsive adoption process enables organisations to be seen as being up to date and in touch with their communities.

One of the key differences between information technology adoption and social media adoption is that the decision to adopt social media has come from a change in consumer communication preferences and behaviour (Mergel 2013, 124) as opposed to a need to rectify an identified organisational problem with an information technology solution (Cooper and Zmud 1990, 124). Miller (2011, 96) argues that "social media is a technological anomaly", where individuals have quickly adapted to the new technology in their private lives, without exposure to it in the workplace. This is quite different to other communication processes (e.g. emails, faxes) where business needs drive the introduction, prior to individuals using the technology in their personal lives.

This bottom up approach together with the more experimental nature of social media adoption in organisations, also highlights the difference in the way organisational policy is developed, with social media policy being developed after using the media as opposed to the traditional technology adoption approach, where policies and procedures were developed prior to the technology being used in the organisation (Mergel et al. 2012, 155, 159).

Additionally, in contrast to other technological adoption in organisations which were primarily undertaken out of public view, social media adoption is highly visible and observable to the online community where "every misstep or unresponsiveness is immediately called out by the public and replicated through each social networking site" (Mergel 2012, 283).

Another differentiating factor between these two types of adoption is that social media uses third party platforms rather the organisation's own information and communication infrastructure (Mergel 2013, 123), alleviating the need to make decisions about hardware and software solutions as previously done in information technology adoption. However, this lack of control over the management of social media platforms brings other concerns for organisations such as little or no influence in relation to platform feature changes (Mergel 2013, 124), privacy issues (Lindsay 2011, 8) and security concerns (Crowe 2012, 64; Van Zyl 2009, 913-914) such as the security of organisational infrastructure and confidential or sensitive data (Gharawi et al. 2010, 360; Picazo-Vela et al. 2012, 505-506).

Factors that Influence the Adoption, Positioning and Use of Social Media in Organisations

There are a number of factors that influence organisational social media adoption including the organisational culture (Meister 2013, 25); management styles (Miller 2011, 97); knowledge and understanding of social media (Silverman 2013; Sheil et al. 2011, 65); and the availability of resources, staff and training to undertake the social media function (Gharawi et al. 2010, 359; San Su et al. 2012, 4; Rea et al. 2011, 93).

Traditionally, there is a strong link between technology adoption and the size of an organisation, as identified in the literature review of Reddick and Norris (2013, 500). Howard (2012, 13) has also identified that the population size an Australian local government serves will influence its use of social media. However, research undertaken by Oliveria and Welsh (2013, 403) indicate that the size of the local government does not impact on dissemination, feedback, participation and international collaboration via social media.

Latonero and Shklovski (2011, 5) identified that an information technology champion within emergency management organisations is essential to drive the adoption and use of technology in these agencies. This finding is further reinforced by Howell and Higgins (in Nah and Saxton 2013, 300) who also identified a strong connection between social media adoption and the presence of a social media champion in the organisation.

Research undertaken by Nah and Saxton (2013, 306) into social media adoption in the not-for-profit sector, has highlighted that a positive relationship exists between an organisation's strategy (i.e. revenue generation from the delivery of programs to the community) and their use of social media to communicate with their clients. Mergel (2013,

127-129) also identifies a link between the mission and strategies of an organisation, the physical placement of the social media function and the subsequent communication style and tactics that will be used. For example, in organisations that focus on representation and inclusiveness, the social media function will be placed within the Information Technology Department, where communications will be mainly one-way and used to broadcast and push information out to the community, such as providing updates and warnings on impending disasters. Whereas, for organisations that focus on engaging with the community, social media is more likely to be situated in the public affairs area, with dedicated funding and staff adopting a more educational approach when interacting with the online community, enabling information to be pulled from social media content and providing a more two-way approach to communication through responding to comments and ad hoc interactions. The third approach is where the social media function is placed with knowledge experts within the organisation, where networking and mingling occur online and information is gained and imparted from these interactions, within organisational social media guidelines.

In summary, the following factors are influential in an organisation's adoption of social media:

1. Organisational culture;
2. Mission statement and resulting strategies of an organisation;
3. The size of an organisation;
4. Management style;
5. Knowledge and understanding about social media;
6. The presence of a social media champion within an organisation;
7. Resource availability, including staff to undertake social media communications; and
8. Availability of training in relation to social media usage.

Social Media Adoption and Implementation Application Models

The adoption of social media creates change in organisations, not only in relation to communication but also in the way it operates and its organisational structure (Mergel et al. 2012, 156; Proctor 2012). Owyang (in Chikandiwa et al. 2013, 367) has studied the impact of social media on organisational structure and has developed five models of social media adoption based upon organisational strategic frameworks:

1. Centralised Model, where policy and strategic direction comes from a single senior level department within the organisation;

2. Distributed Strategic Model, where each department in the organisation will develop its own social media policy and strategic direction;

3. Coordinated Hub and Spoke Model, where the tactical framework comes from senior management and individual departments are left to implement that framework in their own area;

4. Multiple Hub and Spoke Model, while similar to the Coordinated Hub and Spoke Model, differs in that departments within the organisation each define the tactical framework, developing their own social media strategies and tactics accordingly; and

5. Holistic Model, where each department and/or unit in the organisation freely use social media and individual efforts are then coordinated.

Most studies of social media and emergency management focus on crisis communication, with limited research into the adoption and positioning of the social media function into emergency management organisations and local governments. However, recent surveys undertaken by Howard (2012) into Australian local government usage of social media and San Su et al. (2013) which looks at the use, capability and development of social media in American emergency management agencies, have provided some insight into the way in which social media is adopted into these organisations, particularly in relation to staffing, with San Sue et al. (2013, 28) reporting that only 7% of the organisations surveyed have a dedicated social media officer and Howard (2012, 52) identifying the difficulty local governments have in not only finding appropriate staff, but those willing to live and work in rural and remote areas of Australia.

I propose the following models relating to the positioning of the social media function in emergency organisations. The first model "In Addition to your Normal Duties", is where organisations do not create new positions to undertake social media communications, as evidenced by research undertaken by San Su et al. (2012, 28-29) which found that the majority of American emergency management organisations did not increase staffing requirements when introducing social media communications into their organisations. Rather, the responsibility for social media has been added to the duties of existing personnel, such as the case in some emergency management agencies in the United States of America, where

Public Information Officers are now taking on social media communications in addition to the usual role of information dissemination (Sheil et al. 2011, 67). Hughes and Palen (2012, 14) argue that the role of Public Information Officers has now shifted from that of gatekeeper, where the information flow was managed or constrained, to that of translator, where information is being transformed so that it is better understood by emergency managers and the public they serve.

Building on this model is the approach taken by the Queensland Police Service, who managed the growth of their social media sites by limiting promotion in the community to word of mouth communication, enabling media staff time to develop skills and procedures when using social media. Initially, responsibility for social media fell to only a few media officers within the team, but processes were gradually included so that all team members were able to participate in social media communications. It is interesting to note that while social media became an additional component to the media officer roles, one of the lessons identified in their adoption process was the need to also include a social media expert in the team to provide "technical advice and troubleshooting" (Queensland Police Service 2012, 2, 7).

Secondly, is the "All In" Model, where all members of the organisation have the freedom to use social media to communicate with the public. This model is similar to Owyang's Hoslitic model (in Chikandiwa et al. 2013, 367) and has been used by police forces in the United Kingdom to connect police officers with the community they serve, to open dialogue with those communities and support local policing efforts (Crump 2011, 3). For example, not only does the West Midlands Police have its own Twitter account, it also publishes the Twitter handles of individual police officers so the public can follow both the corporate Twitter account, as well as those of individual police officers (West Midlands Police 2014). While there have been some issues emerge with this model in practice, such as an individual officer's comments crossing organisation policy boundaries (Hamilton 2014, 6) and police following celebrities on Twitter (Martin 2013), Crump (2011, 23-24) concludes that while novel in its approach this model has not transformed police communications as first intended but rather has provided another avenue for message delivery.

Thirdly, the "Let's get Together" model depicts how the social media function is not seen as a separate entity, but is integral to other areas of emergency management operations. Anderson (2012, 7-8) notes how this model has been used in the Victorian Government

through the creation of a social media officer position within their State Control Centre structure to monitor social media communications and the Victorian Fire Service's strategy to minimise the authorisation process and enhance intelligence gathered from social media sources by developing a physically close working relationship between key personnel who are able to monitor, use and release information via social media channels. Hughes (2012, 159) has also identified that a similar strategy is being used in American emergency management organisations by having Public Information Officers work more closely with their senior managers to enable approvals for the releasing of information to occur more quickly over social media channels.

Conclusion

This paper has provided an overview of the factors, processes and potential models of social media adoption in emergency management organisations. However, there are currently limitations in the body of research available in relation to the way in which the social media adoption process is implemented, positioned and managed in organisations and particular, in emergency management organisations and local governments in an Australian context.

This study forms the foundation for a forthcoming survey of Australian emergency management organisations and local governments that will address these gaps by exploring the positioning of the social media function within these organisations, looking at the areas of resourcing, staff profiles; funding; policies; the roles, responsibility and authority of staff and volunteers to communicate on social media platforms on behalf of their organisation; and the organisational culture, mindset and thinking behind the adoption, implementation and usage of social media in these organisations. This research will fill a gap in the current body of knowledge about the evolution, positioning and usage of the social media function in organisations working in the emergency management field in Australia. Once completed, these research findings will be fed back to Industry for potential inclusion in future strategies and practices.

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