

Governmental Social Media use for Emergency Communication

Roser Beneito-Montagut

Aston Business School, UK
r.beneito-montagut@aston.ac.uk

Susan Anson

Aston Business School, UK
s.c.anson@aston.ac.uk

Duncan Shaw

Warwick Business School, UK
duncan.shaw@wbs.ac.uk

Christopher Brewster

Aston Business School, UK
c.a.brewster@aston.ac.uk

ABSTRACT

The possibility of crowdsourced information, multi-geographical and multi-organisational information flows during emergencies and crises provided by web 2.0 tools are providing emergency management centres with new communication challenges and opportunities. Building on the existing emergency management and social media literature, this article explores how institutions are using and adopting social media for emergency communication. By examining the drivers and barriers of social media adoption in two European governmental agencies dealing with emergencies, the paper aims to establish a framework to examine whether and how institutional resilience could be improved.

Keywords

Social Media, emergency communication, institutional resilience

INTRODUCTION

In times of crisis, communities need information on the incident such as where they can find help and how they can contact relatives (Longstaff, 2009). In recent years we have observed how web 2.0 tools have been used to provide this information during several large impact disasters, from the early examples of the terrorist attacks in USA on September 11th 2001, or the London bombings in 2005, to Hurricane Sandy in October 2012. To speed up the recovery from disasters and promote resilience governments need to engage with the public in an interactive information sharing system, as lack of effective communication can decrease public trust in institutions (Covello, 2009; Heath & Palenchar, 2002). The paper aims to identify the "drivers and barriers" of social media (SM) adoption for emergency management agencies in the EU as a first stage of enquiry into whether and how institutional resilience could be improved with its use.

SOCIAL MEDIA, EMERGENCY RESPONSE AND ORGANISATIONS

SM technologies are characterized as being interactive and require users to generate, edit or share information (Surowiecki 2004). Its early usage for emergency communication highlighted the active role taken by the public in spreading information in new ways (Palen and Liu, 2007). The web 2.0 usage in Hurricane Katrina was more complex, as it also stressed the future challenges of using these technologies for emergency communication, such as the over proliferation of information, the critical disclosure on private data and the reliability of information. Research highlighted the power of networked conversations, giving voice to no one specific institution, but spreading information through a community structure emerging online (Meraz, 2006) that was not geographically bounded (Hughes et al., 2008). Recent studies have demonstrated Twitter and Facebook's (FB) potential as an emergency communication system in many disasters (Büscher, Mogensen et al., 2008; Starbird et al., 2010; Sutton, 2010; Yan Qu, Zhang et al., 2010) as well as their perils (Castillo, et al, 2011; Waters et al., 2010; Oh et al., 2011). While the early usage of web 2.0 occurred over single SM services, later examples were more complex involving both the public and organisations across several systems. The relationship between official sources of information, private organisations –such as traditional media– and the public –generating and sharing content- became more complex as well. Today we can find multi-organisational networks of government agencies, for-profit firms, and NGOs in dialogue with the public, such as the Federal Emergency Management Authority (FEMA) and national, regional or local emergency management

centres (Jaeger et al, 2007).

However, organisations have just recently begun using SM to address crises (Booz Allen Hamilton, 2009). Nonprofits led the way in adopting SM tools (Barnes & Mattson, 2008; Liu et al, 2012; Sachoff, 2009; Waters, 2010). Consequently few studies have examined how governmental organisations use SM in emergency management contexts (Denis et al. 2012; Latonero & Shklowksi, 2011; Taylor & Kent 2007; Taylor & Perry, 2005).

While the general discussion about SM use for emergency communication covers how to structure, organise and make all the useful information produced during a disaster accessible, agencies need to consider that SM adoption will require changes to communication strategies and institutional procedures, together with overcoming the limitations of adoption. Mergel et al (2008) have identified four main drivers or barriers, which are influencing whether web 2.0 is adopted in general in government and that will frame our analysis: technological, social, economic and legal factors. Briefly, social factors comprise public engagement and participation with SM, practitioner's willingness to use it, building trust between public and institutions and intra-organizational factors (such as organisational flexibility); technological factors include access to internet connection, access to software and hardware to produce, edit and share content, and security and privacy factors; economic factors are investments –workforce, equipment or outsourcing. And standard operational procedures (SOP) take into account internal or external regulations or procedures that guide SM use.

METHODOLOGY

The paper is based on data from two emergency management centres based in two European countries. The research question is: what are the drivers and barriers EU agencies face in adopting SM for emergency communication? The article will explore the ways in which two institutions with similar emergency management structures and similar hazards and threats deal with complex, uncertain, high-tempo operations. One institution is using SM and the other one is not. The data informing the findings came from interviews with practitioners. The interviews undertaken included emergency managers involved in the communication process, including spokesmen, departmental heads and staff of the press office. Interviewees were selected for their leadership positions in their organisations and their involvement in emergency communication. We conducted 8 expert interviews, 4 in each country. We also observed online data when they were using SM. Interview and document data were analysed through coding in pre-established categories related to the main questions of the research in an exploratory way: (1) technological factors, (2) social factors, (3) SOPs, and (4) economic factors driving or preventing social media adoption to engage with the public in a dialogue. In order to assure confidentiality we have anonymised countries, institutions and respondent names.

CASE STUDIES

According to Eurostat data (2012) in country 1, 47% of individuals connect to the Internet at least once per week, while in country 2 it is 77% of citizens who connect weekly (EU27 average 68%). Unsurprisingly, in country 1 27% of Internet users interact at least once per year with public authorities through the Internet, and in country 2 this number rises to 50% (EU 41%). From the institutional perspective, e-government availability and interactivity in country 1 during 2010 was 47.5%, and in country 2 was an impressive 94.74% (EU 84.28%). These data give us an idea of the Internet usage levels for both individuals and for public administrations and helps to contextualise our preliminary findings. In the next sections we describe the technological, social, economic and operating procedural drivers and/or barriers to the SM adoption in each country.

Case Study 1

The adoption of SM in this agency began with the arrival of a new head of the press office. Although the population in this country uses FB more intensively this department decided to launch their SM presence using Twitter. Besides the official Twitter account of the organisation, the spokesman has a “personal” account for his role. Later, they also introduced a YouTube channel and have future plans to implement a FB profile.

The press office use SM for both publishing messages addressed to the citizens and to collect information. The SM department react to information received through SM, passing it on to the correct operational department, as well as using it to understand the public's view of their own organisation. The information collected also helps them to prepare the official institutional answers to the questions received from the citizens. Furthermore, monitoring SM also was helpful for providing situational awareness as they could access immediately live public information about the issue as it was generated. Their routine use of SM undoubtedly prepares them to respond to disasters and during the interviews we got several examples of this.

In this case study social factors are the principal driver for SM adoption: “It is important to engage with society and society is now online”, an interviewee stated. The enthusiasm of the spokesman is a key factor in the adoption of SM. His main motivation is humanize and personalise the institution. In doing so, he uses an individual Twitter account, different from the official organisation account. Although he only provides official information he wants to convey a more personal feeling, in his own words “the spokesman speaks to you”. This helps to promote a direct relationship with the public without intermediation of traditional media that he considers adds a bias. Data also highlighted the value of building a community, they realised how important it is to build a community of followers in times of peace that could be crucial for emergency response in times of crisis. Respondents believe that this community would help to avoid rumour spreading. During recent demonstrations they monitored SM in order to detect and combat rumours. They found that the institutional updates over Twitter helped to establish the correct information. The decision of using SM was supported at all levels of the organisation, although it was a top-down decision. They did not report any interaction with other organisations involved during a disaster.

Interviewees reported some departmental rules prohibiting them from following individual users and not to respond to individual users. They also established procedures for staff personal accounts to ensure that they did not cause any problems. Therefore, formal “legal” barriers to the use of SM do not exist but there are some rules that apply to all members of staff. As in many governmental agencies, this is a command-and-control institution and decision chains are typically top-down, hence the fact that the decision for SM adoption was a driver that came from a head of department.

The establishment of a SM department is evidence of the economic support for these initiatives within this agency. However, the lack of staff was reported as one barrier to adopting SM more intensively and to developing better strategies. Lack of training was also reported as one limitation. Sometimes staff had innovative ideas such as implementing a blog, but the lack of staff and training, together with the scarcity of guidelines and strategies were a barrier.

The challenges for this organisation come in the form of further adoption, overcoming lack of training, staff needs and a lack of guidelines, but from this case study we also learnt that social factors are key to SM adoption.

Case Study 2

The practitioners interviewed did not report any case of SM usage. The insights received are useful in understanding what are the barriers to its adoption. It is especially useful as paradoxically we face a highly technologically involved country, with a population and government exhibiting high levels of engagement with SM, as highlighted above, but with no engagement from any of the agencies studied. Only one interviewee reported preparing for the introduction of FB however was waiting for legal advice. The reasons for planning to use FB were two-fold: for inter-organisational information sharing and for publishing information addressed to other stakeholders, such as private companies. There were no plans to use FB to communicate with the general public.

The findings regarding social factors support the idea that these aspects are essential for SM adoption in this institution. The majority of practitioners interviewed seemed quite sceptical about the use of SM. They recognized its usefulness and its huge impact in society but the lack of clear strategies and rules to adopt SM seems a crucial barrier. The promotion of the institution is the only potential driver that currently could foster SM use in this agency. Another issue that arose in nearly every interview was the influence that age has. They believed that practitioners in charge are over fifty and that they do not use SM, and the young people who use it do not have any authority to adopt it for disaster response. This supports findings from country 1, suggesting that command-and-control agencies need support from top managers. An organisational concern was the fact that social networks are already established and they rely on the telephone to get direct access to other stakeholders. Hence, in organisational terms there is no pressure from any direction to adopt SM.

None of the interviewees reported any technological limitation or barrier. Nobody reported the lack of equipment, Internet access or software as a barrier to adopting SM. We suspect that this absence of problems is due to their lack of engagement with SM, as it is difficult to observe the limitations without being an active user.

Several dimensions of the barriers came up during the interviews: lack of control over the information, lack of guidelines about how to use it, the concern about staff using SM during operations, etc., in other words they are afraid to lose control over the information. They feel that high information control is needed in an emergency and what to communicate and how to communicate is a decision that needs to be made by the leaders, not the staff or the citizens. The general perception is that their SOPs can be disrupted without any chance of anticipation and will threaten the communication process.

On the economic side emergency manager’s agreement about the lack of time, staff and budget was unanimous.

Currently, governmental institutions in this country are suffering budget cuts; these especially affect innovative areas that need an extra effort. In this sense, we did not find any economic support for SM adoption. Hence the economic aspect is a strong limitation.

This case study illustrated the main barriers for SM adoption. Whilst a minority were planning on using SM, all practitioners recognised the impact that SM has on society. However, there were doubts on its adoption. The second case is paradoxical as the absence of SM for emergency communication does not do justice to the fact that they are leaders on technology innovations. It deems that the lack of SOPs and strategies grounded on previous studies and best practices is a powerful barrier. Indeed, most of the interviewees asked us for best practices.

DISCUSSION

These two case studies have reviewed four factors regarding SM adoption for emergency communication. Our exploratory analysis about SM usage in each country shows that the more powerful drivers for adoption are social and the more important barriers are operational. Firstly, while the other categories, technology and economic remain similar in the two cases analysed, the lack of goals and the age of practitioners with decision capacity was determinant. Second, the clarity of rules for using SM in the first case study and the lack of them in the second one seem to be a driver and a barrier. Our findings suggest that this lack of rules may be related to the lack of knowledge about SM.

A crucial part in SM adoption is ensuring enough adaptability to allow the organisation to retain its efficacy. As case 2 has highlighted, when practitioners feel that efficacy, command and control is threatened the tendency is not to promote any innovation that may affect the future image of the institution. On the contrary, case 1 supports the idea that institutional image can be improved using social media, as it is one of their main goals.

Although we are facing the preparation for high-tempo, rapidly changing and very uncertain situations that involve several stakeholders, including citizens, new communicative strategies are emerging. Preliminary results support the idea that it is not the technology that keeps us from innovating – it is the organizational and institutional difficulties that need to be overcome (Mergel et al, 2009). Preliminary results also support the idea that institutional resilience could be promoted with the use of SM.

Nevertheless, more research is needed in order to corroborate these findings in the area of emergency communication and to further investigate whether strategies for adoption will improve institutional resilience or will become a new form of rigid bureaucracy.

CONCLUSIONS, LIMITATIONS AND FURTHER RESEARCH

To conclude we can say, that in order to use SM effectively, institutions need to overcome the actual barriers, and promote the potential drivers in terms of adoption. It would lead to the attainment or improvement of institutional resilience.

These preliminary findings provide insights about the attitudes of key practitioners necessary to incorporate SM in disaster management. Both case studies show that much remains to be done in order to fully answer our initial question. The lessons we have learnt so far are as follow:

- We need more strategies, directions and best practices from governments about using SM for emergency communication during disasters.
- The role of institutional trust seems to be critical. Institutions need to develop and build trust over time and this trust cannot be built during a crisis in order to act as a resilience enabler. SM potentially has a role in trust construction.

For this paper, analysis was limited to two case studies from two European countries. This piece of research is part of initial findings from a project exploring how European governments currently and can potentially use Web 2.0 applications and Semantic Technologies in disaster response. Hence, in future research we will first, extend the data to more institutions in these two countries and, second, include other European countries. It will allow a bigger sample to be achieved that strengthens these preliminary results.

ACKNOWLEDGEMENT

Project undertaken with the financial support of the Prevention, Preparedness and Consequence Management of Terrorism and other Security-related Risks Programme European Commission – Directorate-General Home Affairs.

REFERENCES

1. Barnes, N. G., & Mattson, E. (2008). *Still setting the pace SM: The first longitudinal study of usage by the largest US charities*. Dartmouth, MA: University of Massachusetts Dartmouth Center for Marketing Research.
2. Booz Allen Hamilton. (July 2009). *SM and risk communications during times of crisis*. Retrieved 14th of November, 2012 from http://www.boozallen.com/consulting-services/services_article/42420696
3. Büscher M., Kristensen, M., Mogensen, P. (2008) When and how (not) to trust IT? Supporting virtual emergency teamwork, *Proceedings of the 5th International ISCRAM Conference – Washington, DC, USA*
4. Castillo, C.; Mendoza, M. & Poblete, B. (2011). Information Credibility on Twitter, *International World Wide Web Conference (I3WC2)*, Hyderabad, India.
5. Covello, V.T. (2009). Strategies for overcoming challenges to effective risk communication, in R.L. Heath & H.D. O'Hair (Ed). *Handbook of risk and crisis communication*, New York: Routledge Taylor & Francis. 143-167.
6. Denis, L.A., Hughes, A. and Palen, L. (2012). Trial by Fire: The Deployment of Trusted Digital Volunteers in the 2011 Shadow Lake Fire. *Proceedings of the 9th International*, Vancouver, Canada.
7. Jaeger, P. T., Shneiderman, B., Fleischmann, K. R., Preece, J., Qu, Y., & Fei Wu, P. (2007). Community response grids: E-government, social networks, and effective emergency management. *Telecommunications Policy*, 31(10), 592-604.
8. Heath, R. L., & Palenchar, M. (2002). Community relations and risk communications: A longitudinal study of the impact of emergency response messages. *Journal of Public Relations and Research*, 12(2), 131-161.
9. Hughes, A., Palen, L., Sutton, J.; Liu, S and Vieweg, S. (2008). "Site-Seeing" in Disaster: An Examination of On-Line Social Convergence, *Proceedings of the 5th International ISCRAM Conference – Washington, DC, USA*.
10. Mergel, I., Schweik, C. and Fountain, M. (2009). The Transformational Effect of Web 2.0 Technologies on Government
11. Meraz, S. (2006). Citizen Journalism, Citizen Activism, and Technology: Positioning Technology as a 'Second Superpower' in Times of Disasters and Terrorism. *International Symposium on Online Journalism*. University of Texas at Austin. J.
12. Latonero, M. and I. Shklovski (2011). Emergency Management, Twitter, and SM Evangelism. *International Journal of Information Systems for Crisis Response and Management*, 3, no. 4: 1–16.
13. Liu, B.F.; Jin, Y.; Briones, R. and Kutch, B. (2012). Managing Turbulence in the Blogosphere: Evaluating the Blog-Mediated Crisis Communication Model with the American Red Cross, *Journal of Public Relations Research*, 24: 353–370
14. Longstaff, P. (2009). The Use of Communications for the Resilience in a Population that has Recently Experienced Military Conflict or a Catastrophic Disaster, in (Ed) P. Longstaff, I. Mergel & N. Armstrong (2009), Project on Resilience and Security. *Workshop Report: Resilience in Post-Conflict Reconstruction and Natural Disasters*, Institute for National Security and Counterterrorism.
15. Oh, O., Agrawal, M. and Raghav Rao, H. (2011). Information control and terrorism: Tracking the Mumbai terrorist attack through twitter, *Inf Syst Front*, 13:33–43.
16. Palen, L. and Liu, S. (2007). Citizen Communications in Disaster: Anticipating a Future of ICT-supported Public Participation, *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 727- 736.
17. Sachoff, M. (2009). Majority of non-profits embrace SM. WebProNews. Retrieved 15th of November 2012, from <http://www.webpronews.com/topnews/2009/11/12/the-majority-of-nonprofits-embrace-social-media>
18. Sivarajah, U. and Irani, Z. (2012). Exploring The Application Of Web 2.0 In E-Government: A United Kingdom Context, *Transforming Government Workshop*, Brunel University London.
19. Surowiecki, J. (2004). *The wisdom of crowds. Why the many are smarter than the few and how collective wisdom shapes business, economies, societies, and nations*. New York: Doubleday.
20. Sutton, J.(2010). Twittering Tennessee: Distributed networks and collaboration following a technological disaster, *Proceedings of the 2010 ISCRAM Conference*

21. Starbird, K., Palen, L. Hughes, A. L. and Vieweg S.(2010). Chatter on the red: what hazards threat reveals about the social life of microblogged information. In *CSCW '10: Proceedings of the 2010 ACM conference on Computer supported cooperative work*, 241–250, New York
22. Taylor, M., & Kent, M. L. (2007). Taxonomy of mediated crisis responses. *Public Relations Review*, 33, 140–146.
23. Taylor, M., & Perry, D. C. (2005). Diffusion of traditional and new media tactics in crisis communication. *Public Relations Review*, 31, 209–217.
24. Waters, R. D. (2010). The use of SM by nonprofit organizations: An examination from the diffusion of innovations perspective. In T. Dumova, & R. Fiordo (Eds.), *Handbook of research on social interaction technologies and collaboration software: Concepts and trends* (473–485). Hershey, PA: IG Global.
25. Yan. Qu, C., Huang, P. Zhang, and Zhang, J. (2011). Microblogging after a major disaster in China: a case study of the 2010 Yushu earthquake, *Proc. ACM 2011 conference on Computer supported cooperative work*.