Making use of New Media for pan-European Crisis Communication

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ABSTRACT

Social or new media have over the past years become an integrated part of human communication, both as a means to establish and maintain social relationships, but also as a means of sharing and co-creating information. New media comes with an array of possibilities for individuals as well as organisations, corporations and authorities. Within the field of crisis communication new media possibilities, such as online sharing and social networking, has had an impact on the way crisis information is disseminated and updated. This paper addresses the issues related to using new media as a means of communicating crisis information and broadcasting alerting messages to the general population, and also discusses the role of new media in future pan-European alerting. It focuses on current and on-going research on social media for crisis communication. An extensive systematic literature review was done to identify factors that affect the use of social media for alerting and warning. These factors were mirrored in experiences, collected through interviews, in crisis communication organisations in three European regions (Sweden, Czech Republic and Spain). The factors finally form the basis for suggestions regarding the design of technological tools for both communication and information collection as part of a pan-European alerting system.

Keywords

Crisis Information, Alerting, New Media, Social Media, Screening Tool

INTRODUCTION

Crisis information and alerting of the population has one main motive: to save lives and prevent or limit the dangers and risk of damage caused by the on-going event/s. There are several different technical systems for crisis and emergency management in Europe, such as satellite based warning systems as well as sirens and automated emergency messages and high level strategic and organisational systems (Hill, 2010). The study presented in this paper was conducted in order to identify issues necessary for the design and development of a web screening tool (Artman et al., 2011). The research includes two separate data collection methods: a systematic literature review, and an interview study that investigates practitioner experiences of alerting.

In order to identify, evaluate and interpret available research regarding the use of new and social media in crisis communication a literature review was conducted. The method was based on a systematic literature review process (Kitchenham and Charters, 2007). The general features of a pre-defined strategy include a review protocol, a defined search strategy in order to detect relevant literature, documentation of the strategy, and description of criteria for inclusion and exclusion of results.

In order to ground the analysis empirically, information about the technologies used for alerting and communicating with the public during a crisis event was collected through interviews. Due to the size and variation of countries and languages in Europe, a representative sample selection of EU member states was chosen. Interviews were conducted with 12 emergency organisation officials from regional and local councils

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and fire and rescue services as well as 112 SOS centres in three different regions: the Basque country in Spain, the Kalmar county in Sweden and the Vysočina region in the Czech Republic. The interviews were all conducted by the authors in the respective native languages (Spanish, Swedish and Czech) and then translated and summarized according to the research theme.

FINDINGS

The following section describes the main findings from the literature review and the interview study. The analysis of both the literature review and the interviews was mainly qualitative, and the literature review results are the foundation for the discussion of the findings in the interviews as well as the general conclusions of the paper. The main focus of the literature review and interviews was on crisis information and the warning components' variable, i.e., how warnings and crisis information is disseminated.

Literature review – current issues of social media use in crisis communication

The analysis of the literature review results revealed a number of variables that were re-occurring: aspects of trust, media coverage, media outreach, social media use, media channel, timely response, connectivity, message content and warning repetitiveness. The content was given an including name listed below per each variable.

Warning components

Warning message content is perhaps the most noticeable factor influencing an individual's behaviour. The content of the message include factors such as location, time and magnitude of the impact of an event. If a siren is used for warning it should not be used for multiple purposes, unless it is very easy to distinguish the difference between the sounds. Message style is important. Official messages need to be specific, consistent, clear and accurate and also include explicit conclusions about the threat (Gregg et al., 2007; Mersham, 2010). The *timing* of a message is also of importance – an appropriate release time can lead to effective transmission of crisis information and timely response. With warnings and information broadcasted on TV, an increase in the frequency of broadcasting, a higher percentage of people will be watching it repeatedly, and according to tested models the marginal utility of information release is gradually decreasing (Wei et al., 2010). Timely response is also an important evaluation factor when planning for use of social media in crises management organizations (Earle et al., 2010; Wei et al., 2010; Landau, 2011).

Trust has got to do with both the sender of a warning and the receiver of that warning in relation to the three components source, channel and message (Veil et al., 2011; Samarajiva, 2005; Mersham, 2010). This means that people's trust in a warning message is a result of both their prior experience with the source of the message, the channel used and its content. For instance if the message is received through a friend or family member who is considered trustworthy the information is more likely trusted than if the information is received though a media outlet (Merchant et al., 2011; Landau, 2011; Wei et al., 2010; Gregg et al., 2007; Samarajiva, 2005).

Media (TV, radio, social media, etc.) is an important source for sending out and retrieving information about different aspects of a crisis or a disaster (time, place, magnitude, etc.) Journalists are usually some of the first to be at the place for the event. Today, there might also be local individuals reporting via Facebook or Twitter from the disaster. Media coverage has shown to be an important factor when evaluating warning dissemination processes and rescue activities, and when planning for future crises (Landau, 2011). However, it is important to note that even though the media coverage might be correct it is not necessarily complete.

Different *media channels* should be used for different warnings. For example, a warning for a tsunami, which will affect large groups of people (crop, housing, belongings) on vast land areas, should be easily heard by all in the area and easy to understand (sirens), while the warning for a car pileup along a main road needs to be heard by those driving in that specific area (radio). Regardless of channel, the message needs to be comprehensible, accurate and timely (Gregg et al., 2007; Samarajiva, 2005).

Social context

Connectivity, or the extent to which a region or country is connected (technology, infrastructure, dialogue) between people, to other geographical areas, governmental authorities and foreign states has impact on how fast the population will receive hazard warnings and other important information and therefore how fast they can react upon that information. Also, generation of hazard information by people is hindered by low connectivity, which is especially a problem in rural areas (Samarajiva, 2005). The *use of social media* for warning

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dissemination has increased over the years. Though, most research investigates how it has been used (by authority and individuals), rather than how crises management plans to use it in the future. Aspects concerning social media usage are: individuals inform each other and "spread the word"; news media use of information from individual's social media activities and vice versa; social media usage literacy; and social media technical coverage (Landau, 2011; Mersham, 2010; Merchant et al., 2011; Veil et al., 2011). Veil et al. (2011) present a set of recommendations for incorporating social media tools in risk and crisis communication. Among these recommendations are to use social media tools for environmental scanning in order to listen to what the concerns of the public are, and also to follow public opinion changes. Another important factor for success in using social media tools is to use it for daily communication and activities, and not just in time of crisis.

Environmental cues and receiver characteristics

The most direct warnings to be recognized by people in an affected area are of course those that can be seen, felt or heard (Perry and Lindell, 2006). These warnings are however not directly related to the use of social media for crisis communication although social media are continuously used for direct reporting from on-going incidents and crises. Concerning *receiver characteristics*, studies have shown that for instance people with previous flood experience envisioned flood consequences differently compared to previously unaffected people: people without previous experience underestimated the negative effects of floods (Siegrist and Gutscher, 2008). This may have effect on how they react to and follow for instance evacuation instructions. This is something that needs to be considered: it is important to affect and change people's behaviour before something happens and not while it is already going on (Guion et al., 2007). One possible way to do this is to make use of new social-technical behaviour and affect people through the use of new social media (Goolsby, 2010).

Interviews – technological tools for communication

This section gives a summary of the interviews conducted in the three sample regions, first in relation to the technological tools available for warning and alerting of the population (warning components), and secondly the context in relation to crisis communication.

Warning components – alerting systems and crisis communication

The public warning system used in the Kalmar region in Sweden is a nationwide system for broadcasting emergency warnings and alerts, Important Public Announcements (VMA's), which is administered by the Swedish Civil Contingencies Agency. In order to send VMA's there are several channels that can be used: sirens, TV and radio, Internet (national and regional webpages, national Twitter feed), Radio Data System (used in households around the nuclear facilities in the county), and mobile public address systems (vehicle based).

There is no similar national or region-wide emergency warning system in Spain, but there are five different control systems for sirens in the Basque country. The public warning systems that are in use in the Basque country are sirens and fixed public address systems that can transmit immediate alerts and warning messages, mobile (vehicle based) public address systems for voice broadcasts, TV and radio for alerting messages, and Internet resources. There is also an automatic call message system that can reach all homes in a municipality. Recently the authorities have also launched Twitter feeds for emergency/crisis information dissemination. Inter-organisational warnings (about for instance meteorological situations) to concerned organisations and personnel can be sent through mobile phone text messages (SMS).

In the Czech Republic, the public warning systems include Emergency Warning Messages (EWM's), which is used to alert the population in cases of immediate danger, Emergency Information Messages (EIM's), which is sent out after an EWM in order to provide more information about the situation, Emergency Alert Messages (EAM's), which is broadcasted to alert organisations and people involved in emergency management and disaster response in order to prevent and limit disaster consequences. In order to send out these messages the authorities use sirens, local information systems, mobile public address systems (vehicle based), TV and radio, and mobile devices (for SMS broadcasting). There is also a specialised system to broadcast warnings to people with disabilities.

All three regions clearly make use of media for broadcasting and alerting, but have limited activity in social media outlets. In Sweden, however, there is a national crisis information web page that has an associated Twitter account where updates about current and on-going emergency events are posted.

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Social context – use of social media in crisis communication

In general, few of the respondents in the chosen regions had any personal experience of using new social media tools for crisis or emergency communication or alerting to the public. In Sweden the Civil Contingencies Agency has a Twitter feed dedicated to continuously updated emergency information. The governmental agencies and municipalities have policies and formal strategies for communication through the use of media and social media, although the level of maturity differs greatly between regions and cities. In Sweden the government has acknowledged the need for emergency response organisations to take an active role in social media. Social media are used both to send and receive information and respondents note that it is important to keep track of what's going on in social media to get a picture of the general emotive state of the population.

Another issue related to information and warning channels is the *trust* in the sender. According to the Swedish respondents there is a need to allow local and regional authorities to manage the crisis information and communication as the population believes that they are more knowledgeable and trustworthy through their contextual awareness. Being open with available information will increase the trust in the governing authorities as well as relax the stress on other channels, or as one respondent put it: "The more information you give, the less people call and worry". A major issue in Sweden regarding information and warnings to the population are the channels used – the traditional media are still a major part of this activity but there is an increase in use of official web pages as well as the use of social media for information broadcasting.

In the Basque country warning messages sent out to the public are not adapted to any specific target groups and the same message goes out to all people, regardless of demographic factors. When asked about the public's trust in authorities the respondents state that in general people have more trust in professional emergency workers than for instance in politicians, which is one major reason to let emergency professionals be the ones delivering information about on-going incidents. The respondents also note the importance of information messages being "short, clear and precise".

The Czech respondents noted that the information strategy is an important issue with regard to how the population reacts to a warning message. However, when it comes to warning messages the emergency responders do not take issues such as demographics into consideration. One message and information format is used for all recipients, as is the case in the Basque country. Specific local adjustments are handled via local voluntary fire brigades and personal contact.

ANALYSIS AND DISCUSSION

Among the main issues to consider when designing a new web screening tool for social media as suggested by Artman et al. (2011), is the issue of trust – both on behalf of the sender and the receiver. The sender must trust in the channel and the receiver will react differently to the warning information based on among other things the channel used, and the source of the information. Studies have shown that information is more readily trusted if the source is someone the receiver already trusts and has a relation to either directly or online (this can be family and social networks, but also authorities and organisations). The message content and its coverage are also important – the disseminated information might be right but the coverage is not complete. Media coverage has shown to be an important factor when evaluating warning dissemination processes, rescue activities, and when planning for future crises.

In general the use of social media is relatively widespread in Europe (for instance used in two of the three regions mentioned in this paper) and there is reason to believe the social media use and coverage will rather increase than decrease in the near future. One important factor for success in using social media tools is to use it for daily communication and activities, and not just in time of crisis (Veil et al., 2011; interview respondents). This is necessary for creating a relationship with people online, as well as creating trust. It is also important for a crisis communicator to be clear, honest and precise in communication and to share and follow messages from other credible sources. Veil et al. (2011) also recommends the use of social media tools for environmental scanning in order to listen to what the concerns of the public are, and also follow public opinion changes.

It is important to note that not all people are actively involved in interactions in social media, thus social media cannot replace other communication strategies. Communication through social media should therefore be seen as a complement to the traditional outlets for crisis communication and also as an opportunity for dialogue with the population so that communication strategies can be improved (Artman et al., 2011; Veil et al., 2011).

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FINAL COMMENTS – MAKING THE MOST OF WHAT WE KNOW

This paper has described a study where a literature review and interviews with crisis management practitioners were used as the basis for identifying key factors to be considered for the design of a crisis management social media screening tool. By utilizing new media, emergency managers can take advantage of several of the human reactions to crisis information. One of the main factors that influence how people react and behave during a crisis is their social network and of course the information they receive. Social media incorporates several of the main influencing factors identified by Perry and Lindell (2006); they include social networks, they are a channel and source of information and they are a platform for sharing experiences. These experiences can also be an important input to crisis managers, both in terms of how the information was received, but also giving indications as to the current state of the event. A screening tool based on technologies for analysing online natural language texts related to an event can thus be a very helpful tool for crisis communication management.

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