Authorities don't tweet, employees do!

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Abstract

The research presented in this paper explores government authorities' use of social media. An exploratory approach has been used to identify characteristics of online interactions over an extended period of time. The data consists of communications and interactions of Twitter accounts belonging to a multitude of Swedish government authorities, ranging from top-level accounts of formal agencies, to accounts belonging to employees stating a formal position at a government agency. The findings show that there is a large diversity in the characteristics of government accounts. The focus of the paper is to presents an account type typology that represents government authorities presence on social media services. The authors believes that acknowledging these differences are an important step in theorizing the role of social media in crisis communication and for future research on social media use in emergency and crisis management practices.

Author Keywords

Social media, Emergency response, Crisis management, User typology

Introduction

This paper aims to provide a richer description of what earlier has been discussed as formal organizations' use of social media. Studies of social media in crisis and

crisis management often portray citizens as seekers of information (Pottz, 2007), sources of information (Vieweg et al, 2010), and a self-policing and problem-solving mass that uses social media to innovate new methods and meaning of the technology (Palen & Liu, 2007). However, the characteristics of formal actors' use of social media is less known. Social media has changed how organizations in the field of crisis management are able to provide information, communicate and engage with the public, but research has to a large extend focused on how citizens has used social media, thus creating a dichotomy in theory and view of the role of social media in emergency and crisis events.

The paper begins with a review of related research on social media use in crisis management, and with a specific focus on the research of government authorities' emerging use. The following section presents the research method with selected method, data sampling and analysis. Next are the findings presented, and the paper end with a discussion and conclusions.

Related Research

Social media research in the field of crisis management and emergency response has mainly three related streams, the publics use of social media during crisis and emergency events (e.g. Palen & Liu, 2007; Vieweg et al, 2010) professional responders use of social media (e.g. Bruns, 2012; Sutton et al 2011; Latonero & Shklovski, 2010; Heverin and Zack, 2011), and technology-driven research aiming to find methods and techniques to filter out situation specific information from an otherwise noisy medium (e.g. Verma et al 2011; Abel et al, 2012).

A large portion of the research on social media use in emergencies has focused on citizen's use, identifying aspects such as information production (IP) activities. Starbird et al (2010) has identified *generative* IP as a core in the IP cycle by "providing the raw material that later production behavior works to shape into a meaningful information resource". *Synthesizing* is the next step where available information is gathered, filtered relayed and adapted to suite new means. *Derivative* information is that information that is received through re-tweets, by following @-tweets and by getting re-sourced information. Reuter et al (2013) has also identified four types of Twitter users from a data set collected during the 2011 tornado season in the USA. The *reporter, retweeter, repeater*, and the *helper* was identified, each with their of specific characteristic of producing and distributing information. The reporter generates the information while the retweeter distributes the most important information. Repeaters distribute both generative and synthetic information over and over of the information he wants to make known, and helpers are those that use Twitter to organize helping-activities such as donations, awareness and specific efforts such as search-and-rescue (Reuter et al, 2013).

As social media has become a more common tool for crisis communication and information gathering, more attention has turned towards professional responders. Governmental adoption has however been slow (Sutton, 2009). A key aspect of social media use during emergency and crisis events is that "online communications enable organizations to manage their own communications activities and engage with stakeholders and constituents directly and in real time" (Sutton et al, 2012). Denef et al (2013) found that the

Greater Manchester Police (GMP) and London Metropolitan Police (MET) systematically used Twitter during the 2011 riots to communicate with the constituents. Tweets from the GMP (@gmpolice) and MET (@metpoliceuk) accounts as well as ==tweets directed to mentioning== were collected and analyzed. The main finding was a major difference in the communication approach. While the MET used an *instrumental* approach that was formal, impersonal and focused, the GMP used an *expressive* approach that was informal, personal and included direct interactions with the followers. Follow-up interviews also revealed that the GMP also had over 60 localized accounts. A similar study of government authorities use of social media was conducted by Sutton et al (2012) during the Deepwater Horizon event. 238 official U.S. government Twitter accounts were collected to analyze Twitter posting behavior. 26% of the accounts posted during the event, and most of these were managed by government agencies affected by the oil spill, either by a geographical or topical closeness to the event. The data shows how "government accounts" have specific characteristics as an actor on the Twitter network, mainly that there is an asymmetry in the following/followers relations with a larger numbers of followers, while only following a smaller number of actors, thus creating hierarchy. There are also a few actors with a larger degree of connections, making them central actors and thus having higher influence in terms of broadcast and exchange of information, and for establishing norms for posting.

These studies provide insight to government authorities presence on social networking services, but there is still much to learn about governments' use of social media, and this paper aims to address and broaden aspects of the "government account" by providing specific characteristics to inform future research.

Method

Online activities on social networking services of government authorities have been studied over a period of eight months. The MASS project (Monitoring Authorities uSe of Social media) was designed and developed as an extensible platform to monitor, collect and analyze online activities. During a six months period over 238 000 outbound and inbound interactions on Twitter were collected from over 247 Twitter accounts belonging to Swedish authorities with a responsibility and mandate to manage civil security, emergency response and crisis management.

Official government Twitter accounts was collected from official web sites, through searches on social network sites, and by a 'snowball method' where the "following" and "follower" networks of identified accounts were searched to find additional government accounts on Twitter. Official accounts was considered those that were formally stated as official by a government agency, as well as those where the account description stated that it belonged to either a person in a formal position, or that the account belonged to a formal function of the government authority. Following/follower connections and posted content was used to validate accounts not formally stated on authority web sites. In total 247 accounts was collected.

MASS utilizes the Twitter Streaming API to automatically captures both out- and inbound interaction in real-time. Communication with the Twitter API is handled by using Twitter4J, an unofficial

Java library for the Twitter API. Communications and interactions from the public is protected by an anonymization mechanism, required both by Swedish law as it is forbidden to create a register of private citizens views. A total of 133 000 interactions were captured during the time six months reported on in this paper.

The analysis presented in this paper used a qualitative and explorative approach with open and structured coding intended to identify important structures for future research. The analysis used a sample of two organizations with a large representation, the Swedish Police represented by 31 accounts, and the SCCA, the Swedish Civil Contingencies Agency that was represented by 18 accounts. A first pass focused the SCCA, and a second pass on the Police accounts confirmed the patterns. By analyzing account description, tweet content and content focus a number of specific account characteristics were found.

Findings
Based on the extensive material collected and analyzed in this explorative study, tentative findings are presented regarding a user-typology. The topology strives to describe characteristics of government accounts based on a their specific characteristics and use. The analyzed Twitter accounts showed to have specific characteristics based on name (correct name versus alias, user name, profile picture (logo versus photo), description, explicitly affiliated organization, linking, and content focus. An important data point is also a disclaimer found in several user descriptions. The level and type of interactivity is the main differentiator between accounts. Published content could either be focused or to a large degree diverse. The published

content could also to a varying degree be professional, social, or professional social chatter. The following section presents a typology of Twitter users found by exploring the data set.

User typology
Government authorities are normally large organizational constructs and include a number of divisions, offices, functions, roles and employees. This fact is also reflected in their presence on social media. Analysis of the collected accounts and interactions suggests a four-layer typology consisting of accounts characterized as formal top-level accounts representing *organizations,* formal high-level *functions and roles, formal personal accounts,* and *affiliated personal accounts.*

Organizations. Formal top-level accounts are characterized as a channel for outbound dissemination of formally processed and validated information. Published information is mainly intended to inform the public on general matters or ongoing events. The content is mainly short versions of information produced by public relations or information officers for other outlets, such as the organization website, and the content published on Twitter is generally linked to the original source. Publication on Twitter is often made through third-party services by pushing RSS content to the Twitter stream. Top-level accounts are commonly intended for unidirectional communication and mainly function as a mean to push information to a commonly used platform for information sharing. The following example demonstrates the most common form of post published by top-level accounts where the content is part of a larger mass of text, and the text has been cut

to fit the 140 characters limit of a tweet including the link to the original source of the content:

"Plan of action to strengthen information security in the society: SCCA has together with the agencies that has ... http://t.co/0CzsCPho #MSBse" - @MSBse

Formal top-level accounts often come with a "we do not reply" disclaimer in the account description text. The description text below illustrates this type of disclaimer:

"Follow *us to get news from SCCA, the Swedish Civil Contingencies Agency. We do not reply here, but we do at @msbdialog."* - @MSBse

"*Follow the Police to get news about events from the whole country. We do not reply here, but if you have tips or questions, please call 11414. In case of emergency, call 112. Sweden – www.polisen.se"* - @polisen_riks

These account description texts show that despite the ambitions to ensure improved communication abilities many governmental authorities are still struggling to fully embrace the potential of bi-directional interaction with the public. As organizations get smaller, there are also a smaller number of accounts associated with the organization. As there are less accounts these are used for more types of interactions, and smaller government authority branches such as municipalities are often close to resemble the *function* type of account.

Functions and Roles. Specific functions and roles are on the next step of the formal latter. A formal function can be characterized as a service designed to meet a specific demand. Krisinformation.se (CrisisInformation -

CI) is one such function designed and run by the Swedish Civil Contingencies Agency (SCCA) to provide accurate and up to date information to the public. The CI website publishes information about common or current issues, and they also have a presence on social media via Twitter, Facebook and YouTube.

Formal roles are also included in this category. Roles are commonly higher-level commanding officers in an operative role. Roles such as commanding field officers or incident commanders are commonly carried by a number of people on a rolling schedule, and this is a main differentiator from formal personal accounts since the account is used and managed by multiple people. An emerging phenomenon is to have accounts for commanding officers in police, paramedics and rescue services to provide insight and engagement with the public. The following description is that of the account used by the the commanding field officer of the southern police district in Stockholm, together they have produced over 6000 tweets:

"Viktor Adolphson and Johan Säfström works as commanding field officers in the general-duties division in Södermalm, Stockholm City. Södermalm · http://www.facebook.com/polisen.soderm alm"- YB_Sodermalm

The information disseminated by a function or role accounts is mainly that produced by the specific unit, but re-tweets of information published by other actors in the civil security and crisis management networks are common as well. Dialogue is more often approved of, and the SCCA even has a specific function responsible for managing the dialog with the public both on Twitter (@MSB_Dialog) and on Facebook.

"Chat with the Swedish Civil Contingencies Agency (SCCA). We mainly reply during office hours. Also follow our news @MSBse! http://www.msb.se/MSBdialog " - @MSBDialog

Compared to the strict and instrumental use of formal top level organizational accounts is the general tone and approach of the formal function accounts more in line with the *expressive approach* presented by Denef et al (2013).

Formal Personal Accounts. Formal personal accounts belongings to a specific individual, commonly executives, managers, or people in specific roles. Communications and information officers in organizations are commonly found to have Twitter accounts that describe their work and role at the governmental agency.

"Samuel works with research and development on knowledge on command and coordination during emergencies and crises at the Swedish Civil Contingencies Agency (SCCA). Karlstad · http://www.msb.se" - @samuel_k_msb

Tweets mainly include information or references about the official work and current topics, but also personal opinions about ongoing situations or work. The Twitter description text most often presents the persons role within the organization. Content provided is almost exclusively produced for the specific media. It is common to recommend online content to the following network, to re-tweeting content from the following network, and to forward information from higher up in the organization. Quality and relevance of the content

may vary from strict professional use to personal and social use.

Affiliated Personal Accounts. Affiliated personal accounts are more informal and expressive, commonly used for social interactions between friends and peers. The connection to the government authority is made through the description text of the account by names the organization, role and responsibility. The description text often states that the account belongs to an individual working in a formal role, but a disclaimer often states information published are personal opinions and not the organizations. This disclaimer could disqualify the account from the typology, but since the accounts is used to discuss both the organization, ongoing events, important topics, and to communicate with individuals and functions both internally and externally these accounts are vital to understand communication and social media use in the organizations. The two following excerpts shows two different account descriptions that names both role and organization, but also expresses that the tweets are personal:

"Work with the development of command and coordination at SCCA. Views expressed are my own. - http://www.msb.se/ledning" - @JohanGert76

"Communications and crisis management at Swedish Civil Contingencies Agency, MSB. Former monitor at EU monitoring mission in Georgia, EUMM. Private tweets! Stockholm, Sweden" - @LiselotteJansso

The content produced varies from information from the organization, to reflections and opinions, to social chatter. A large degree of the published content focuses

on news, reflections and experiences from a work related perspective.

"#RAKEL gets praised by Stockholm and #Östersund police. Eases collaboration between agencies! Municipalities in Jämtland are currently switching to RAKEL. #pfs" – @JohanGert76

Discussion

Government authorities have over a short period of time adopted and appropriated social media as a channel to communicate with the constituents, other organizations in the civil security and crisis management networks, and with peers. Research on social media and government authorities emerging use of the medium has so far and to a large degree considered the government accounts as one type of actor in networked communication. The findings presented in this study however suggest that there are multiple types of accounts used for different purposes. This is an important dimension and aspect of crisis communication and future research on communication in crisis management.

The "Government Account"

Findings of the study show that the social presence of government authorities is an inter-mix of organization, functions, roles and employees. Top-level accounts representing the organizations currently tend to not follow the social norms of Twitter, but instead mainly focus on levering the network effect when broadcasting information. Specific functions are designed to manage dialogue with constituents, and there are a numbers of functions, roles and employees that now are assigned, or have taken upon them the task of being in a constant contact with the constituents. There is a great

need to further explore these differences, and approaches to social media appropriation. Denef et al has previously (2013) shown that there is a difference in how similar organizations approach social media as a means for communications with constituents, Sutton et al (2012) has showed that authorities are central nodes in shaping online communication and conduct, and Starbird et al (2010) and Reuter (2012) proved specific aspects of communications and communicators. This study contributes with a broader view of what "government accounts" are. This contribution will influence how future research on social media use will be conducted; as well inform the design of communication services in crisis management networks.

Conclusions and Future Research

As part of the study a framework was developed to capture and analyze Twitter use. 247 user accounts affiliated with Swedish government agencies is now monitored and 238 000 tweets have to date been captured. By analyzing a smaller subset of the tweets, the Police's 31 accounts and the Swedish Civil Contingencies Agency's 18 accounts, a broader perspective of social media use by government authorities has been developed. This paper presents a user-typology consisting of 1) high-level formal organizational accounts, 2) accounts for formal functions and roles, 3) formal personal accounts, and 4) affiliated personal accounts. The study shows how social media and new forms of crisis communication are being appropriated as an intertwined practice in emergency response and civil security domains. Future research efforts will explore how this structure affects networked communication and the role of each account

type in day-to-day work and crisis communication. Further detail on each user type will also be provided.

References

[1]   Abel, F., Hauff, C., Houben, G. J., Stronkman, R., & Tao, K. Semantics + filtering + search = Twitcident. Exploring information in social web streams. *In Proc Hypertext and social media 2012*, ACM Press, 2012, 285-294

[2]   Bruns, A. J. Burgess, K. Crawford, and F. Shaw. (2012). #qldfloods and @QPSMedia: Crisis Communication on Twitter in the 2011 South East Queensland Floods. Brisbane: ARC Centre of Excellence for Creative Industries and Innovation.

[3]   Denef, S., Bayerl, P. S., & Kaptein, N. Social Media and the Police—Tweeting Practices of British Police Forces during the August 2011 Riots*. In Proc CHI 2013*, ACM Press 2013, 3471-3480

[4]   Heverin, T., & Zach, L. City Police Department Adoption and Use of Twitter as a Crisis Communication Tool. In C. Hagar (Ed.), *Crisis Information Management: Communication and Technologies Oxford*, UK: Woodhead Publishing Limited, 2011

[5]   Latonero, M., & Shklovski, I. 'Respectfully Yours in Safety and Service'-Emergency Management & Social Media Evangelism. *In Proc. of ISCRAM 2010*

[6]   Palen, L., & Liu, S. B. Citizen communications in crisis: anticipating a future of ICT- supported public participation. *In Proc of Human Factors 2007*, ACM Press, 2007, 727-736

[7]   Potts, L. Peering into disaster: Social software use from the Indian Ocean earthquake to the Mumbai bombings. In *Proc IPCC 2009. IEEE International*, 2009, 1-8

[8]   Sutton, J. N., Spiro, E. S., Johnson, B., Fitzhugh, S. M., Greczek, M., & Butts, C. T. Connected Communications: Network Structures of Official Communications in a Technological Disaster. *In Proc ISCRAM 2012*, (2012)

[9]   Reuter, C., Heger, O., & Pipek, V. Social Media for Supporting Emergent Groups in Crisis Management. *In Proc CSCW 2012*, (2012), 11-15.

[10] Starbird, K., Palen, L., Hughes, A. L., & Vieweg, S. Chatter on The Red: What Hazards Threat Reveals about the Social Life of Microblogges Information*. In Proc CSCW 2010*, ACM Press, (2010), pp. 241–250

[11] Sutton, J.N. Social media Monitoring and the Democratic National Convention: New Tasks and Emergent Processes, *Journal of Homeland Security and Emergency Management 6*, 1, (2009)

[12] Sutton, J. N., Spiro, E. S., Johnson, B., Fitzhugh, S. M., Greczek, M., & Butts, C. T. (2012). Connected Communications: Network Structures of Official Communications in a Technological Disaster. *In Proc ISCRAM 2012*, (2012)

[13]   Verma, S., Vieweg, S., Corvey, W. J., Palen, L., Martin, J. H., Palmer, M., Schram, A. & Anderson, K. M. Natural Language Processing to the Rescue?: Extracting'Situational Awareness' Tweets During Mass Emergency. *In Proc ICWSM 2011*, (2011), 385-392.

[14]   Vieweg, S., Hughes, A. L., Starbird, K., & Palen, L. Microblogging during two natural hazards events: what twitter may contribute to situational awareness. *In Proc CHI 2010*, ACM, (2011), 1079-1088