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Connected citizenry: An exploration of local government social media adoption for community engagement

by

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Abstract

The participatory nature of Web 2.0 technology offers many benefits to municipal government organizations, particularly as a means of sharing information, accessing citizens and garnering feedback. Although government use of the technology has become prevalent in many different countries, the adoption rate of social media for community engagement amongst local governments remains low. This study explores the perceptions and attitudes towards social media in the context of municipal governments and whether these influence adoption of the technology for community engagement activities.

A qualitative study using the case study approach guides the collection, interpretation and analysis of the data from open-ended interviews with selected municipal government communication professionals. Drawing on Rogers (2003) Diffusion of Innovation Theory, Winston's (1998) model of technology adoption and, literature on social media and barriers to technology adoption, this study identifies adoption accelerators and suppressors related to social media adoption for the purpose of community engagement. A primary finding is that the heteronomous nature of municipal government organizations limits the potential of social media adoption for community engagement.

Introduction

As social media and mobile technology become an increasing part of daily life, we may wonder why this virtual environment has not been used widely for community engagement activities by municipal government institutions. Information and communication technologies (ICT's) offer the opportunity to expand interactions between residents and their local government. Despite examples from municipalities around the world, including those within the United States, Central and Eastern Europe, South Africa and Asia (Harfoush, 2009; Lasica, 2008; Moon, 2002; Shah, 2007), the adoption rate of social media for community engagement amongst local governments remains low. This study seeks to explore this phenomenon amongst municipalities within the Alberta Capital Region.

Although local governments in Alberta are mandated to seek public input (Province of Alberta, 2004) on key initiatives, rates of participation remain low (Longford, 2008; Statistics Canada, 2009). The research on government adoption of technology reveals benefits such as facilitation of new and existing services and, encouragement of citizen participation (Gupta & Jana, 2003; Jaeger, 2003; Relyea, 2002). Moreover, the participatory nature of social media technology (Boyd & Ellison, 2008; O'Reilly, 2005) reveals more flexible and convenient ways for citizens to be informed, consulted, and participate in their local government. Despite these findings local governments in the Alberta Capital Region have been slow to adopt the technology for community engagement, which raises the question of why.

As described by Everett Rogers (2003), there have been many studies on the diffusion, adoption and use of technology with the organization as the unit of analysis

(Meyer & Goes, 1998; Mohr, 1969; Rice & Webster, 2002; Rogers, 1991; Tyre & Orlikowski, 1994; Valente, 1996). This research identified similarities in the diffusion process amongst individuals in a social system and amongst organizations within an industry. Other studies have explored adoption of technology from a user perspective (Dutton, 2008; Fine, 2006; Fortunati, 2002; Menz, 1999; Mohr, 1969; Orlikowski, 1996).

Research on local government's rate of technology adoption, and more specifically adoption rates of social media in the context of community engagement is limited. Studies that do exist have examined adoption of the broad concept of e-government services defined as information dissemination, two-way communication, service and financial transactions, registration and marketplace for vendors, and political participation (Moon, 2002). Other research has focused on adoption of available e-government services by private users and businesses (Tung & Reick, 2004) and, effectiveness and implementation challenges of e-government services (Jaeger & Thompson, 2003; Moon, 2002). In an effort to contribute to existing research on government adoption of technology, this study will use Everett Rogers' (2003) Diffusion of Innovation Theory, Brian Winston's (1998) technology adoption model and, literature on social media and technology adoption barriers and accelerators to explore adoption of social media technology for community engagement amongst municipalities.

Research Question

This study seeks to explore the perceptions and attitudes toward social media for the purpose of community engagement amongst municipal government organizations in order to ascertain why this technology has not been more widely adopted.

Theoretical Framework

The Diffusion of Innovation Theory (Rogers, 2003) and Winston's (1998) model of technology adoption will act as lenses in this exploratory study. This framework intends to offer insight and guidance in the identification of adoption accelerators and barriers. Furthermore, an attempt will be made to unveil recommendations that municipal government organizations could employ in the adoption and implementation of social media technology for community engagement activities.

According to Rogers (2003), rate of adoption is determined by perceptions of the technology's five innovation characteristics of relative advantage, compatibility, trialability, observability and complexity. In Winston's (1998) model of technology adoption, new technologies are affected by the 'primacy of the social sphere'. Within this social context supervening social necessities, or demonstrable needs, act as accelerators on adoption levels while the presence of general social constraints limit the potential for wide adoption (Winston, 1998).

In this study the social sphere of municipal government organizations will offer the context for exploring the drivers and brakes of social media adoption. The five characteristics of innovation (Rogers, 2003) will be used to identify these social forces that Winston (1998) describes as 'supervening social necessities' and 'suppressors'. The emphasis will be on social, economic, cultural and technical influences (Winston, 1998) that determine local government adoption of social media for community engagement.

Community Engagement

Within the realm of municipal government the term community engagement is accompanied by a plethora of definitions. For the purpose of this study the focus will be

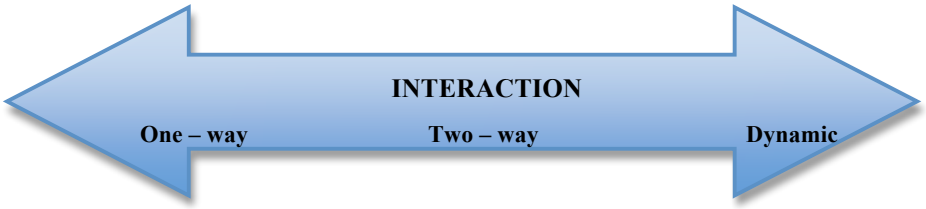
on communicative interactions between the municipality and its citizens, with citizens defined as those who reside within the municipality. Community will entail the geographic boundaries of the municipality and the citizen population located within those boundaries. Engagement will be examined in the context of one-way, two-way and dynamic interaction between the municipal institution and the population. McGee (2007) suggests a continuum of interaction that will be used to categorize community engagement activities, which include, information sharing, consultation, joint-decision making and implementation of decision.

Information sharing emphasizes a one-way interaction whereby the municipality seeks to push information out to the public. The number of information channels that are used to reach the audience broadens this element of engagement. Advertising, portable signs, postings on websites, and posters are some examples of how municipalities push information. Recently social media has been added to this list of information channels with some municipalities applying the technology to their repertoire of communication tools.

The next form of interaction along the continuum is consultation, opening the prospect of two-way interaction. This aspect of engagement implies pushing information out and pulling in feedback. Often municipalities apply tools such as telephone or direct mail surveys to elicit feedback on specific issues. Technology has provided another means by which this information is sought with many municipalities offering opportunities for the community to provide input through online surveys or questionnaires.

Shifting towards more dynamic interactions, both joint decision-making and implementation of decisions imply that the public needs to be involved if actions and solutions are to reflect community perceptions and issues. This element focuses on facilitating the creation of policy and practice outside the bounds of the governance system, seeking to adapt and develop engagement processes that are accessible and relevant to the community.

Table 1. Continuum of Community Engagement (Adapted from McGee, 2007).



Engagement Activity	Information sharing	Consultation	Joint Decision Making & Decision Implementation
Goal	To build awareness of issues that affect residents (e.g. advertising, press releases, signs, and notices on government websites)	To seek feedback, test ideas and/or develop concepts (e.g. focus groups and/or on-line surveys and opinion polls)	• To foster a dialogue between residents and municipality for the development of collaborative solutions (e.g. workshops and/or focus groups). • To delegate some or all aspects of implementation of solution (e.g. partnerships between municipality and affected parties)

Literature Review

As the administrative body closest to citizens, the decisions, policies and procedures imposed by municipal governments tend to have the largest impact on their daily lives (Steyaert, 2000). These organizations are the stewards of services such as waste collection, water distribution, road repairs, snow removal, and recreation amenities, and therefore play a critical role in establishing and maintaining quality of life

experiences. Despite this influence, engaging citizens in local government is an on-going challenge (Longford, 2008; Statistics Canada, 2009).

Municipal engagement

The emphasis on increased public participation in government comes from a perception regarding the inadequacies of representative democracy (Hartz-Karp, 2005). Levine (2003) suggests three aims of participatory democracy: 1) enable citizens to discuss public issues and form opinions; 2) give leaders better insight into public issues than elections are able to do; 3) enable people to justify their views so leaders can sort out the better from the worse. Traditionally, municipalities offer the opportunity for participation through such exercises as public hearings, open houses, focus groups, and/or Council meetings. These practices emphasize face-to-face interaction between fellow citizens, elected officials and administrators whereby opinions are shared and ideas exchanged based on information provided by the municipality.

More recently local governments have offered on-line surveys or questionnaires and, opinion polls as a means of soliciting input. This leaner form of communication (Daft & Lengel, 1986) could be characterized as a simple input/output system. The municipality provides information for public consideration, collects input from citizens online, synthesizes the information and, produces an output.

Despite the presence of these engagement options, citizen participation remains low. Voting rates, a popular measure of participation amongst citizens, reveal that between 1988 and 2008 the percentage of people who voted in an election or referendum declined from 75.3% to 58.8% (Elections Canada, 2008). Furthermore, statistics show

that voting in municipal elections represents the lowest participation when compared to federal and provincial election voter rates (Statistics Canada, 2008).

Non-voting political activity is measured by participation in any of the following activities: signing a petition, searching for political information, attending a public meeting, contacting a newspaper or politician about a political issue, participating in a demonstration or march, and volunteering for a political party (Human Resources and Skills Development Canada, n.d). Statistics Canada (2003) indicates that 45% of the population does not participate in non-voting political activities. Moreover, amongst those that do participate, demographics play a role with the younger age group of 15 – 24 demonstrating a higher level of political participation, closely followed by the 25 - 44 age range (Statistics Canada, 2003).

Bichman, Rifkin and Shrestha (1989) describe community participation as a social process in which groups with shared needs living in a identified geographical area actively detect needs, make decisions, and create mechanisms to achieve solutions. Amongst municipal governments, Web 2.0 technology, and more specifically social media, offers the potential of revealing a new dimension for community participation.

The evolution of Web 2.0

Since 1991, when the internet first became a publicly provided service (Berners-lee, 2000), there has been a transformation from its initial static platform of displaying information for user consumption to a dynamic venue of coordination, collaboration and production (Shirky, 2008). Between 1991 and 2003 the web was used primarily as a way to consume content (Cormode & Krishnamurthy, 2008). Web 1.0 has been described as a medium for publishing and one-sided interaction (Freedman, 2006). It is often explained

simply as a "page" on the World Wide Web that is created and updated centrally at relatively predictable intervals of time (Cormode & Krishnamurthy, 2008; O'Reilly, 2005).

In 2004, Tim O'Reilly (2005) coined the term Web 2.0, describing it as a platform whereby users could not only consume content but also participate in its creation. Web 2.0 centralizes the user by facilitating the formation of connections and by offering the ability to post content in many forms such as, photos, video, and blogs (Cormode & Krishnamurthy, 2008). Web 2.0 promotes the "architecture of participation", going beyond the page metaphor to offer the user a richer experience (O'Reilly, 2005).

Everybody's doing it

The propensity for Web 2.0, and particularly social networking, can be demonstrated by its remarkable growth. In 2006, after two years of operation, Facebook had a total of 14,069 unique visitors, with MySpace holding the top social network site position with 51,441 unique visitors (comScore Media Metrix, 2006). Three years later Facebook has taken top spot with 68,557,534 unique visitors (complete.com, 2009). MySpace occupies second place boasting 58,555,8000 unique visitors, while Twitter jumped from a previous ranking of 22 amongst social networking sites to third place with 5,979,052 unique visitors (compete.com, 2009). Between 2009 and 2010 Facebook and Twitter had the largest gains in unique visitors of 69% and 45% respectively (The Neilsen Company, 2010).

In Canada social media usage figures are just as impressive. comScore Media Metrix (2008) reports that 87% of Canadians aged 15 or older, who accessed the internet either from home or at work in September of 2008, visited a social networking site

(comScore Media Metrix, 2008). On average Canadians spend 5.6 hours per day on social networking sites, visiting an average of 649 pages (comScore Media Metrix, 2009a). This is further supported by statistics that show significant growth in global traffic to social networking sites between 2008 and 2010. The Nielsen Company (2010) reports that time spent on social networks each month grew by more than 100% between 2008 and 2010 with the average time per person growing from over two hours to just over six hours.

Facebook's greatest growth comes from the age demographic of 35 – 49 (The Nielsen Company, 2009a). In the case of Twitter, much has been made of the idea that this site is primarily used by youth. A study by The Neilsen Company (2009b) indicates that in actuality the highest user demographic for Twitter is the age range of 25-54. Youtube (n.d) boasts a diverse demographic indicating that their range of users falls between 18 and 55 years of age. These statistics help, in some way, to understand why those municipalities in the Alberta Capital Region using social networking sites (see Appendix A) have chosen Facebook, Twitter and Youtube as their primary tools.

Data related to growth of the technology is often used to promote the idea of social media adoption. The professional experience of this researcher however indicated that this knowledge does little to overcome perceived challenges. With this in mind, an initial review of literature was conducted to expose the potential engagement benefits of the technology. The apparent penchant for social media and its possible benefits related to engagement led to the research question of why the technology had not been more widely adopted by local governments.

The promise of social media

In the context of engaging municipal citizens, Kavanough, Reese, Carroll and Rosson (2005) suggest that through Web 2.0, civic information can be disseminated more easily, quickly and widely as compared with more traditional mediums. Convenience, flexibility and speed are attractive attributes given the value of time for both municipal leaders and citizens. Web 2.0 alleviates the time constraint through the dissemination of information to a large group, anytime/anywhere (Kavanough, et al., 2005; Lugano, 2008). Furthermore, the distribution can easily be shared again and again as members continue to "forward" the information, making it easier and faster for organizations to share information with others (Kavanough, et al., 2005).

Clay Shirky (2008) takes the efficiency of information sharing, access to large groups and, connectivity anytime/anywhere attributed to social media to the next level, arguing that the technology lowers transaction costs. He suggests that this new media makes it easier for groups to self-assemble without the high costs of formal organizational structures, to share, collaborate and act collectively (Shirky, 2008). Furthermore, Shirky (2008) discusses the evolution of social tools that include digital messaging, the ability to send messages to groups and, convergence of the Internet with mobility (Shirky, 2008). All of these have contributed to the notion of easy group forming through the many-to-many communication paradigm (Shirky, 2008).

When considering the ubiquity of the many-to-many paradigm that is part of everyday on-line interaction, it is worth exploring Mark Granovetter's (1973) network analysis based on the concept of strong and weak ties. Whereas a strong tie is characterized as a combination of time commitment, intimacy, reciprocity and emotional

intensity, a weak tie, or bridge, is more likely to link members of 'different' small groups as it does not require that same level of committed interaction (Granovetter, 1973). It is through weak ties that information is most efficiently diffused (Granovetter, 1973).

Caroline Haythornthwaite (2001) found that weakly tied communicators (of which most municipal citizens could be categorized), "due to their low motivation to communicate and low influence on each other's behaviors, are most likely to rely on an organizationally established, low overhead, medium for communication, accepting the group-wide connectivity it provides" (p. 7-8). This is further supported by research from Quan-Hasse, Wellman, Witte and Hampton (2001) whose findings indicate that people will use whatever means appropriate and available at the moment to participate in organization and politics. This research supports the notion that social media technology has the networking potential to capitalize on the many-to-many paradigm (Shirky, 2008) through weak ties (Granovetter, 1973).

The networking capacity of social media facilitates the easy formation of groups (Shirky, 2008). William Dutton (2008) and James Surowiecki (2004) argue that the advantages of these groups include the ability for a large number of individuals to outperform small number of experts by sharing information and solving problems through production. This is accomplished through two-way and dynamic interactions whereby large groups share information, opinions and ideas through dialogue. Furthermore, this leads to the coordination of jointly generated content, and offers the potential of turning it into action (Dutton, 2008; Surowiecki, 2004).

Table 2. Highlights of social media attributes for community engagement.

Social Media Attribute	**Engagement Activity**
Efficient information dissemination	Information sharing
Access to large population	Information sharing
Anytime/anywhere connectivity	Information sharing
Social networking	Information sharing Consultation
Easy group forming	Consultation Joint decision making and implementation

From a municipal organization perspective, the use of social media has the potential to facilitate a variety of community engagement activities. This brings into to question why it has not been more widely adopted for this purpose. According to Winston (1998) technology adoption cannot be explored simply from attributes. The social sphere or context, in which the technology is to be considered, reveals a web of preferences that influence and shape adoption (Winston, 1998).

The municipal sphere

The majority of municipal organizations promote organizing work in a systematic way. True to the cybernetic tradition, the systematic network emphasizes components that interact to form something more than the sum of the parts (Littlejohn & Foss, 2005). These organizations are characterized as systems feeding on connections that promote stability, efficiency and control. This consists of a network of linkages that join and interact to facilitate the operation of the whole. The primary purpose is to develop,

maintain and implement legislative, policies and procedures that fulfill the local government mandate set out by the Province of Alberta (2004) and ensure service provision to the relevant geographic population.

James Taylor (1995) classifies this system as heteronomous. This model of organization rationally responds to the environment and communication is described as an exchange of information (Taylor, 1995). The metaphor of machine (Morgan, 1986) comes to mind whereby patterns of response are generated by inputs from the environment and reflected through the organization's outputs (Taylor, 1995). Performance is measured by efficiency or productivity (Taylor, 1995). The internal structure is depicted as a network of connections concerned with processing information, responding and eliciting control (Taylor, 1995). This is exemplified through interactions that promote first, routine practices and procedures and; second, the receipt of information, collective processing and, responding through the production of objects (Cooren, Taylor & Van Every, 2006) such as policies, bylaws and procedures that control tasks and activities.

When interacting to fulfill their purpose of legislative practices, as well as policy and procedure creation, the organizational emphasis of stability, efficiency and control takes precedence. This is the common object (Cooren, et al., 2006) to which organizational members orientate. Work is organized using previously constructed policies, procedures and guidelines. The premise is to maintain stability and reinforce structure in accordance with the heteronomy (Taylor, 1995) of the organization. According to Menz (1999), these characteristics promote the action of routine decision-making.

The efficiency of routine procedures rests in the fact that they are experience turned into structure (Menz, 1999). Furthermore, the emphasis on previous experience means that routine procedures provide organizations with predictable stability (Menz, 1999). And finally, routine procedures are binding (Menz, 1999), facilitating control. For municipalities, proven practices make for an attractive and efficient model on which to base future activities, hence their propensity for routine actions and decision-making.

Making the connection

Supporting the idea of the organization as a structure elicits the need to differentiate between the internal and external environment. Within a heteronomous system the boundary that connects these environments is what Valera (1979) refers to as a coupling surface. Coupling represents the links, or connections, in the network system and is further defined as the interactions between the nodes in the system (Taylor, 1995). The nodes represent people, and their interactions (Taylor, 1995) are characterized as information exchanges which take place at the coupling surface (Valera, 1979). True to the machine metaphor (Morgan, 1986), information enters the municipality from the environment. At this point, the organization performs the role of consumer and responder with the produced output driven by the input (Taylor, 1995).

Looking for a brake

For local government organizations emphasizing stability, efficiency, routine practices and decision-making, facilitating communication with citizens beyond information exchange may increase uncertainty and equivocality (Daft & Lengel, 1986; Weick, 1990). Daft and Lengel (1986) suggest that uncertainty is linked to perceptions

around how difficult the technology is to use or understand (Davis, 1989). The presence of these factors will influence whether or not a technology will be adopted.

In the case of social media the equivocality, or multiple meanings associated with the technology (Weick, 1990), adds complexity for organizations. Questions arise such as, "is the technology designed to connect with friends and family, share information, coordinate interactions, or collaborate with others?" And, "which one of these fits with our needs?" This is where some of the 'why' factors, that maybe influencing the adoption rate of social media amongst municipalities are identified.

Wanda Orlikowski (1996) and Rob Salkowitz (2008) suggest that consideration of adopting technology has much to do with context, experience and relevance. The ability for people to experience the applicability of a tool aids in formulating perceptions of relevance in meeting their specific requirements (Orlikowski, 1996; Salkowitz, 2008). This is often manifested through perceptions of the potential operational or logistical impacts of the technology on organizational procedures and practices, both existing and potential.

For organizations, competing factors such as cost, resources, and technological infrastructure are key considerations (Moon, 2002). Limited bandwidth, expense, hardware and software functionality are some obstacles identified for the use of social media services (Moon, 2002; Pagani, 2004). Other studies have found that security and privacy are two of the largest barriers to the adoption, use and broad participation in social media (Fine, 2006; Moon, 2002; Pagani, 2004; Tapscott & Williams, 2008). This is accompanied by research from Tapscott & Williams (2008) who posit that, organizational hesitancy towards technological change is often associated with perceptions around the

time and financial resources it will take to implement. The idea of resource commitment is further supplemented through research that suggests no matter how easy the technology is to use, if it provided no usefulness it was not adopted (Davis, 1989).

Table 3. Analysis of drivers and suppressors of technological change in municipal governments.

Drivers	**Communication and technology solutions**	**Suppressors**
Need to access diverse population to generate awareness, share information and/or coordinate interactions	Local newspaper advertisements and articles, electronic signs, advertising boards, posters, face-to-face meetings. RSS feeds, text messaging, social networking sites, instant messaging, e-newsletters.	Human resources • to monitor and facilitate • expectation of always being available • time required to learn technology Lack of understanding and/or relevance of technology Privacy implications Corporate policy implications for use of technology Technological limitations such as broadband access server capacity and hardware infrastructure Limitations of population's accessibility to Internet Security implications Financial implications Corporate culture barriers • attitudes and perceptions towards technology • attitudes and
Need for feedback/opinion gathering	Face-to-face meetings, presentations, telephone and direct mail surveys, focus groups. Website based services such as online surveys, discussion forums, text messaging, and/or blogs.	
Desire to promote participation and transparency in government activities and projects	Interactions with municipal staff either face-to-face, e-mail or telephone to request or retrieve data. Online access to government data such as policies, procedures, GPS and/or permitting information.	
Desire to collaborate and build community network	Face-to-face interaction such as public hearings, open houses, focus groups community meetings, task forces and/or municipally	

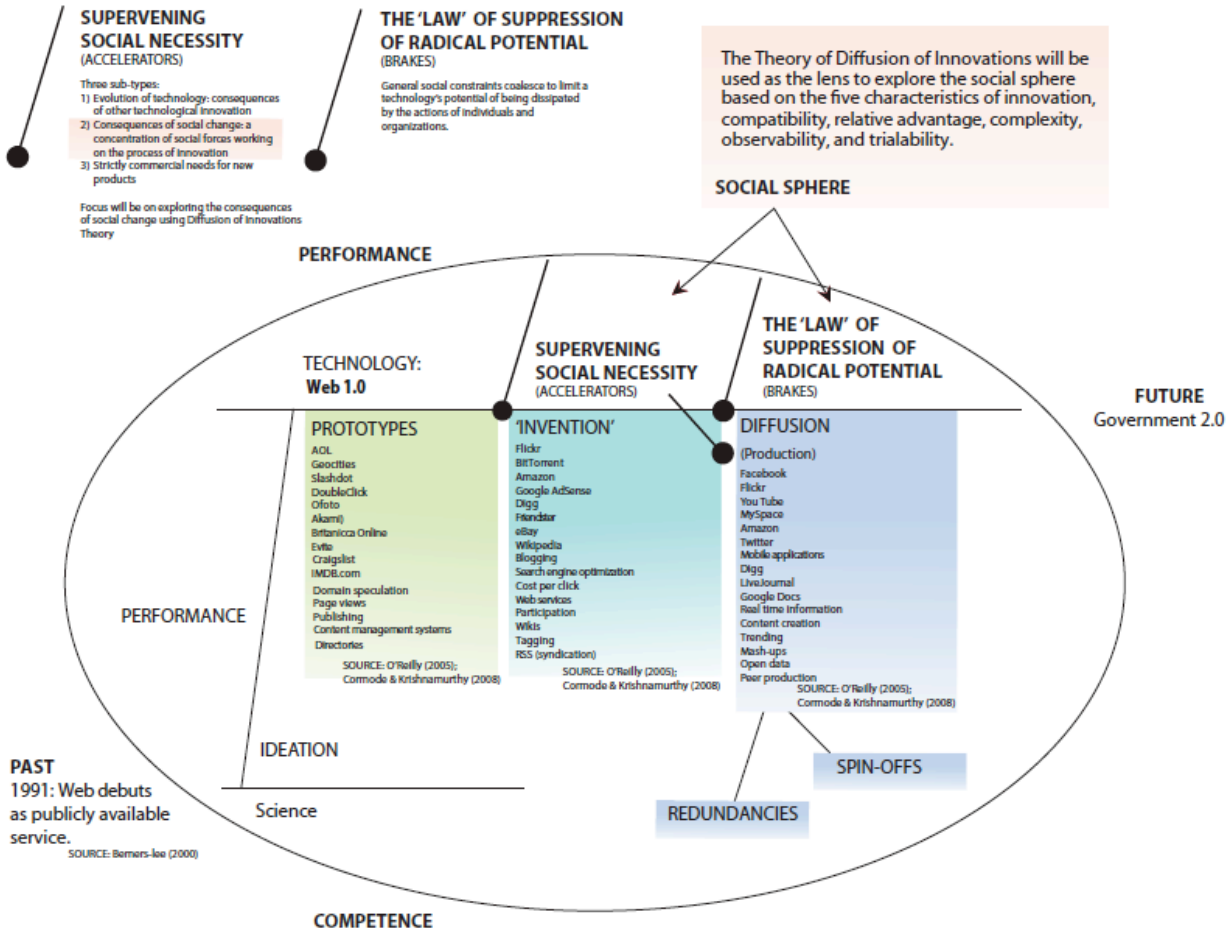
	appointed public committees/boards. Community events. Discussion forums hosted by the municipality. Wikis or collaborative document applications.	perceptions regarding community engagement Diversity and scale of participation amongst population Uncertainty/equivocality related to the technology

Technological evolution

In order to effectively explore the influence of these predicted drivers and suppressors (Winston, 1998) it is important to understand the historical circumstances surrounding the use of communication technologies. Brian Winston (1998) presents a model of technology adoption and argues that there has been a steady evolution of technologies that can be demonstrated by investigating the history of various technologies. In the case of the Internet, for example, Winston (1998) posits that it is simply an evolution of previous technological prototypes versus a revolution. Beginning with ideas that spawn devices, Winston (1998) emphasizes the importance of science and, the relationship of prototypes to inventions. He explains that there are forces that push technological developments and inhibitors that delay or stagnate technology (Winston, 1998). Winston (1998) argues that the 'primacy of the social sphere' is where this push-pull dynamic occurs thus suggesting that the main influences in technology adoption come from social, economic, cultural and technical factors. This contradicts other views that promote technological determinism; supporting the notion that technology changes society (Rogers, 2003). For the purpose of this study Winston's (1998) position is

applied. Figure 2 depicts Winston's illustration of these patterns in the context of the transformation of Web 1.0 to Web 2.0.

Figure 2. Winston's Model outlining the adoption of Web 2.0.



Note: Adapted from Winston, B. (1998). Introduction: A storm from paradise – technological innovation, diffusion and suppression, and Chapter 1, The Telegraph. Media technology and society: A history from the telegraph to the Internet. New York, NY: Routledge, pp. 1-29.

Winston (1998) argues that social forces influence the adoption of Web 2.0 in various contexts. Three municipalities from the Alberta Capital Region are being used as examples in this study that seeks to explore the social forces (Winston, 1998) that accelerate or suppress technological transformations in the social sphere municipal government organizations. Exploration of these forces is conducted from the organizational perspective using Everett Rogers' (2003) Diffusion of Innovations Theory.

Rogers (2003) suggests that there are five characteristics of innovation that influence attitudes and perceptions of technology and hence, adoption. Relative advantage deals with the perception of whether the idea that is being presented is better than the one it supersedes (Rogers, 2003). Compatibility is the degree to which an innovation is perceived as being consistent with the existing values, past experiences and needs of potential adopters (Rogers, 2003). Trialability has to do with the degree to which an innovation may be experimented with on a limited basis (Rogers, 2003). Observability references the extent to which the results of an innovation are visible to others (Rogers, 2003). Finally, Rogers (2003) describes the role of complexity as the perception of how difficult the technology is to understand and use (Rogers, 2003). These characteristics have been supported through the findings outlined in the literature review and have aided in the formulation of the study methodology.

Methodology

The rationale for this research project is rooted in frustrations experienced professionally by the researcher when attempting to engage citizens in local government. Understanding the potential benefits of technology in facilitating dynamic interactions led to an attempt to apply this knowledge. After personally encountering several barriers,

comparisons were sought in an attempt to ascertain the adoption rates of social media amongst municipalities in the Alberta Capital Region.

Preliminary research was conducted and consisted of a review of the 25 municipal websites within the Alberta Capital Region, as well as searches on Facebook and Twitter to determine municipal presence. Only four of the 25 regional municipalities were found to have adopted and implemented social media (see Appendix A). The low rate of adoption prompted further investigation into usage figures for social media.

Study approach

Key considerations enacted when selecting the methodology for this study included the need to strike a balance between rigor, reliability (Stenbacka, 2001), time and finances. Given the research project was derived from professional experience, the industry of municipal government was selected as the focal point. Benefits of this choice included: 1) ease of access to subjects in a cost effective and efficient manner; 2) the ability to draw upon existing knowledge (de Vaus, 2001) of the industry to aid in contextualizing the project and; 3) the applicability of the research to local government fostering support from these organizations in the form of invested time for conducting the research.

Qualitative research emphasizes characteristics of the selected unit of analysis through the exploration of processes and meanings that occur naturally (Denzin & Lincoln, 2000). This type of research can be used to obtain details such as emotions and thought processes (Strauss & Corbin, 1998). With an emphasis on identifying the attitudes and perceptions towards social media, the qualitative approach was deemed to be the best suited for this research project.

Two strategies for the qualitative approach were applied to this study. The first was the grounded theory approach that "uses a systematic set of procedures to develop an inductively derived grounded theory about a phenomenon" (Strauss & Corbin, 1990, p.24). In this regard, a systematic set of procedures were divided into different stages – developing a research question; using theoretical sampling to collect data; analyzing data through a progression of coding procedures and a review of relevant literature (Strauss & Corbin, 1990).

The second strategy applied to this research project was case study. The endeavor to comprehend (Yin, 2003) why social media is not more widely adopted matches well to the case study methodology whereby, understanding will provide a better means of devising potential strategies. The prospect of turning knowledge into action added to the attractiveness of the case study approach. Finally, a desire to augment external validity and help defend against researcher bias (Voss, Tsikriktsis, & Frohlich, 2003) resulted in the choice to conduct the research with multiple cases.

Study scope

The decision to work with a small number of cases was made in an attempt to garner more detail versus scope (Silverman, 2005). Selection of the three cases for this study was built upon the preliminary research conducted on the 25 municipalities contained within the Alberta Capital Region. Five criteria were identified to aid in case selection: 1) population size (seeking comparable sizes), 2) classification as urban or rural (attempting to compare two types of municipalities), 3) maintains a website (attempting to demonstrate the level of technology currently adopted and implemented), 4) utilizes social media to interact with citizens (seeking to compare adopters versus non-

adopters) and, 5) employs staff dedicated to communications. The population size for the three municipalities selected range from 17,000 to just over 30,000. Two urban municipalities and one rural were selected. All three maintain a website and employ dedicated communication personnel. To maximize the similarities and differences of the data collected through the case study method, a municipality that has adopted social media for interacting with citizens was selected along with two non-adopters.

Data collection

The primary mode of data collection was respondent interviews. This was selected in an effort to gain a better understanding of the perceptions and attitudes toward social media amongst local governments through detailed interviewing (Denzin & Lincoln, 2000). It was believed that respondent interviews would aid in classifying complex attitude patterns and understanding the interpretations attributed to technology motivating actions (Lindlof & Taylor, 2002).

Individuals that occupy positions responsible for corporate communications were interviewed. The choice to interview the heads of the communication departments was two fold. First, these positions require the individual responsible to possess a level of expertise in communications. Second, their experience in municipal government would provide insight into the interpersonal and cultural logic of each organization's communicative practices (Lindlof & Taylor, 2002).

These face-to-face interviews formed the primary source of data for the study. As the researcher had no social ties to the respondents but was known to each of the interviewees based on previous professional contact, the choice was to utilize nondirective questions (Lindlof & Taylor, 2002). Grand tour questions were crafted with

the intent of enabling the respondents to point out key considerations such as routines, rituals, and procedures (Lindlof & Taylor, 2002). This was of interest in light of the theoretical framework for this study. Furthermore, recognition that asking the same tour questions might result in similar answers across the multiple cases resulted in the development of probes to help reflect potential differences and delve into parts of the larger questions (Lindlof & Taylor, 2002).

Once the questions were finalized the selected cases were contacted and interviews were scheduled. All three participants were interviewed within 10 days of one another. The interviews were recorded and then transcribed through a contracted resource. Appendix C outlines the chain of evidence (Yin, 2003) for the study, which incorporates multiple sources of data to increase the reliability of the information in each case study.

Operationalization of research

A preliminary list of categories and data codes were developed based on Rogers (2003) five innovation characteristics, Winston's (1998) models of technology adoption and, the reviewed literature. Strauss & Corbin's (1990) questioning techniques were applied to reflect on the data being collected in order to generate ideas for coding and, for establishing more precise questions in the next interviews. As the data collection and coding evolved, new codes were added to the coding list. Appendix B shows the inductive coding applied to the data from the transcripts.

As the code frequency began to reveal patterns of similarities and differences, links between the data analysis evolved to identify dominant themes. These themes were then verified against the literature for explanations and insights. A code map (see

Appendix D) was used to clarify the relationship between the characteristics of innovations.

Relative advantage (Rogers, 2003) was explored based on perceptions and attitudes of the following social media attributes:

- accessibility (Jarvenpaa, Lang, Takeda, & Tuunainen, 2003; Lugano, 2008; Rheingold, 2000)
- information sharing capacity (Kavanough, et al., 2005)
- awareness generating capacity (Kavanough, et al., 2005)
- ability to coordinate, collaborate and gain feedback (Shirky, 2008)
- joint decision implementation, transparency, (Dutton, 2008; Surowiecki, 2004)
- efficiency and effectiveness (Lugano, 2008, Rheingold, 2000; Shirky, 2008)
- cost effectiveness (Shirky, 2008)
- social networking for connecting community (Granovetter, 1973; Shirky, 2008)

The capacity for social media to build and bridge networks (Granovetter, 1973) also contributed to the assessment of relative advantage. As argued through the literature, social media provides a platform upon which networks are formed into relational groupings that connect people (Fuchs, 2008). In this context social networking was assessed for relative advantage whereby mediated technology is used to foster density, diversity, size or extent of connections to community.

Compatibility (Rogers, 2003) was examined through the identification of organizational needs and values associated with the Community Engagement Continuum (Table 1). Consideration was also given to the heteronomy of municipal organizations, acknowledging that communication choices are products of organizational norms

(Turner, Grube, Tinsley, Lee & O'Pell, 2006) and values. Furthermore, identification of the norms and values would help identify perceptions regarding the strength of social media in comparison to perceived strength of historical community engagement practices (Henfridsson, 2000). In relation to the code map (see Appendix D), organizational need and value was also assessed from the perspective of the attributes of social media listed above and, supplemented by exploration of the perceptions regarding community demographics related to technology use and government transparency (Dutton, 2008; Surowiecki, 2004).

Trialability (Rogers, 2003) was explored through experience and relevance (Orlikowski, 1996; Salkowitz, 2008) and narrowed to past experience with the technology, a willingness to learn by doing and, relevance of the technology for local government community engagement. Furthermore, Orlikowski's (2000) findings were considered when exploring perceptions and attitudes regarding customization and the use of social media on a project basis to aid in the identification of trialability (Rogers, 2003).

Assessment of observability (Rogers, 2003) was identified through context (Orlikowski, 1996) of social media use by government, personal and private sector. This was supplemented by exploring observations of social media's applicability to foster community connections by building, bridging and bonding social ties (Granovetter, 1973).

Complexity (Rogers, 2003) was explored based on the following perceptions and attitudes regarding the challenges of social media:

- difficult to understand and/or use the technology (Davis, 1989)
- security implications (Pagani, 2004; Tapscott & Williams, 2008)

- privacy implications (Moon, 2002; Pagani, 2004)
- cost implications (Fine, 2006; Moon, 2002)
- policy implications (Tapscott & Williams, 2008)
- technological infrastructure implications (Moon, 2002)
- uncertainty and/or equivocality of the technology (Daft & Lengel, 1986; Weick, 1990)

Limitations and biases

The following limitations and biases have influenced the design, data collection and conclusions in this study:

- The number of small cases selected means that the results cannot be easily generalized to the municipal government organization population
- Data is analyzed from the perspective of individual adoption characteristics versus organizational characteristics (Rogers, 2003)
- The study focuses on classic intra-organizational barriers such as cost, resource implications, and technological infrastructure limitations
- Researcher's lack of expertise in using chosen research methodology might limit the directions of inquiry
- The researcher is familiar with the interviewees. This familiarity combined with interview inexperience, might have allowed subtle visual cues to affect responses
- Deciding what questions to ask, and how to select and order the data, required judgments to be made on the part of the researcher therefore this study could not be completely objective

Hypothesis

Hypothesis #1 – Organizations that perceive social media to be compatible with existing values, past experiences and organizational needs are more likely to adopt the technology for community engagement.

IF-THEN Hypotheses:

Rule #1 IF organizational needs AND relative advantage of social media are present THEN adoption is more likely

Rule #2 IF organizational values AND relative advantage of social media are present THEN adoption is more likely

Rule #3 IF past experience with social media is present THEN compatibility is more likely

Hypothesis #2 - Organizations that perceive advantages to the use of social media over 'traditional' methods are more likely to adopt the technology for community engagement.

IF-THEN Hypotheses:

Rule #4 IF use of social media on a project basis AND relevance of the technology AND customization of the tool are present THEN relative advantage is more likely

Rule #5 IF the use of social media has been observed THEN relative advantage is more likely

Rule #6 IF efficiency AND effectiveness are present THEN adoption is more likely

Hypothesis #3 – Organizations that perceive social media as difficult to understand or use are less likely to adopt the technology for community engagement activities.

Rule #7 IF difficult to use AND difficult to understand AND uncertainty of technology are present THEN adoption is less likely

Rule #8 IF security AND privacy AND cost implications AND policy implications AND technological implications are present THEN adoption is less likely

Findings

The interview questions were aimed at identifying the perceptions and attitudes towards social media for the purpose of community engagement. Table 3 below represents the main themes revealed through data coding and analysis based on the characteristics of innovation (Rogers, 2003).

Table 3. Summary of data coding and analysis main themes.

Innovation characteristic (Source: Rogers, 2003)	**Main themes**
Relative advantage	• Awareness generation of events or issues • Access to resident population • Push/pull of information • Collaboration
Compatibility	• Feedback solicitation • Address community demographics • Community involvement
Trialability	• Relevance of technology • Past experience with social media • Customization of technology
Observability	• Government use of social media
Complexity	• Corporate implications of adoption

Descriptions of the main themes, along with representative excerpts collected from the interviews are explored in relation to the five characteristics of innovation (Rogers, 2003). As the case study includes adopters and non-adopters of social media a

distinction has been made in the excerpts in order to aid in the identification of similarities and differences amongst the three cases.

Relative advantage

The most dominant relative advantage theme expressed by the respondents related to the perception of social media in facilitating awareness generation through sharing information. Each respondent referred to the advantage of social media in "putting information out there", while making reference to the lack of daily news media in their community, "it's another way to get information out, especially in an environment where we only have a weekly newspaper".

This perceived efficiency of the technology was reflected through the perceived ability to access the population anytime/anywhere. One non-adopter respondent described the perceived advantage as generating more engagement, "that's gonna awaken people to what it actually is and what's actually going on, and, perhaps, create more engagement with the community simply 'cause you're getting real-time information instead of stuff that's days old". While the adopter respondent was more direct in assessing efficiency, "People can go on that and make a comment at any time of the day or night, and the comment is posted real-time."

Respondents indicated that using social media to push information out was perceived as valuable however reciprocation through soliciting feedback, opinions or ideas was also advantageous. Here, a link to the perception of the efficiency and effectiveness of the technology was made whereby social media was seen to be more convenient then traditional engagement activities. The one respondent who's organization adopted social media commented that, "I've seen it so far getting people involved that

normally would not come over and be involved." The two respondents who had not adopted social media perceived advantages in satisfying the public's desire to be involved, "people like the opportunity and, to respond, but they can't always meet your requirement, 'if I have to be at a certain place at a certain time', that doesn't work," thus affirming the advantage as experienced shared by the adopter respondent.

The two non-adopters perceived benefits of collaborating through social media, classified as the municipality interacting with the residents and the residents interacting with one another. One non-adopter described this advantage as another means of engagement,

> You Tweet that out, you pull the traffic back, you start people...You know, and then people are checking back to see what the responses were to their comments, that's gonna create a different level of engagement. So, there is that opportunity.

The other non-adopter perceived advantages to the dynamic interaction required for collaboration through social media, "the beauty of public engagement in a, in a perfect world – and this, social media, to me, is where this is gonna happen – is that people need to listen to each other." The adopter respondent also perceived collaboration to be an advantage of social media however they indicated that, "we're not getting involved, necessarily, in that discussion. We're letting the community get involved."

Compatibility

The main theme for the innovation characteristic of compatibility (Rogers, 2003) was the organizational value for community involvement. All three cases indicated the desire for public participation, "We want the share." This was accompanied by the perceived organizational need for feedback and opinion gathering amongst all three

respondents reflected in the following comment, “the main thing is we're looking for feedback from the community. We want to have that.”

The two non-adopters indicated that community engagement activities needed to address community demographics and often reflected the use of more traditional practices, such as open houses and focus groups, to satisfy this need. “I think this has a lot to do with the type of individuals that live in this community, and those that wanna participate in public engagement still like that face-to-face, um, kind of environment that they’re used to,” said one non-adopter. Although data pointed to all three cases revealing the ability to address demographics as an organizational need, the adopter was the only respondent to perceive social media as a means of complimenting traditional engagement initiatives, stating that, “I think that the value of both types is getting us where we need to be. And it's getting people, the people that do participate, [and people] that wouldn't normally come out to a focus group or an open house.”

Trialability

The main theme for the trialability innovation characteristic (Rogers, 2003) was relevance of the technology for community engagement activities with all three respondents identifying social media technology as relevant to engagement. Among the non-adopters this perception was related to their personal experience with the technology,

> just following what I'm seeing in the different hashtags that I'm following in Edmonton, jus, you know, different things that are going on, um [pause]... People who are connected through that forum [pause] they're, they're talking about it, and they're realizing more and... Uh, uh, just following the conversations, like people just seem that much more engaged.

The adopter respondent referenced the perceived relevance of the technology through the past experience of increased public input rates. Using online questionnaires

as the example the adopter commented that, “What I'm finding, with our online, especially the questionnaires that we're doing, we're getting a fairly decent response rate, and, um, it almost seems to be higher.” Past personal experience also contributed to the adopter’s perception of relevance for engagement as reflected in the comment,

> I use Facebook, I mean, personally, Facebook I use more just to stay connected with a really small group of friends that I have. I don't use it outside of that. Um, and Twitter is sort of where I get all my info.

The ability to customize the technology was also a main theme found within trialability (Rogers, 2003). The idea of customized use was reflected across all three cases. The adopter respondent indicated using the technology on a project specific base, “We're building a new dog off-leash park, so get feedback from residents, instead of having that personal, open house thing, we [unclear] online forum, advertised it to the public and we've been receiving feedback and suggestions through that.” The perception of being able to customize the technology for specific purposes was also prevalent amongst the two non-adopters whereby relevance was linked to customization, “I can see it for very targeted things, such as fire departments... It would be more appropriate because that's a very focused group.”

The adoption of social media on a project basis was perceived by the non-adopters as a way of mitigating financial and human resource concerns. It was recognized to be a more manageable option if a timeline and topic was specified for the mediated interaction. This is reflected in the following comment from one of the non-adopters, “There will be a Facebook page for our community square project. But we know it has a short window. It’s only ‘till June.” The adopter respondent stated, “we haven't opened our Facebook wide open yet. We don't allow our fans to just post. We only allow them to

comment... ...so on a post," thus giving credence to the manageability concerns perceived by the non-adopters. Furthermore, the adopter respondent's acknowledgement of this modification reflects customization of the technology by limiting full access to the technology's features.

Observability

Government use of social media was the main theme for the observability characteristic of innovation (Rogers, 2003). All three respondents had observed individual and private sector adoption and use of social media through their personal adoption of the technology. Moreover, all three cases expressed a high level of awareness and observation of social media use by government organizations. One non-adopter indicated observing the Provincial government's adoption of social media. The comment, "They're just sending information out however it may be," reflected observation of adoption for information sharing. The other non-adopter expressed observing adoption of social media by other municipalities also as information sharing on a project basis, "I know the City of Calgary has used it for different things, like, you know, youth engagement, on certain events, promoting events and activities and stuff like that," while the adopter respondent indicated observation of municipalities "dabbling" in social media by sharing information.

Complexity

Corporate implications were the main themes within the complexity innovation characteristic (Rogers, 2003). All three interviewees indicated the need for establishing corporate policies related to the use of social media for community engagement. One non-adopter indicated that current policies reflected internal use and either banned

employees from using the technology at work or, restricted use to coffee breaks or lunch hours, "The biggest hurdle is nobody in this environment is allowed to go on Facebook. So, if you're gonna make it a tool for the organization, what're you gonna do about, uh, barring everyone from Facebook?" The other non-adopter echoed the perceptions regarding implication of adoption on corporate policy through this comment,

> But, we are a bureaucratic organization and we are gonna have to, you know, take all of the stats…and, uh…and develop policy. But you also have to measure it and evaluate it and make sure you have those measurement and evaluation tools preprogrammed and set up so you can actually know if you're being successful or maybe we were better just sending letters directly out to people and getting responses back that way. So, you can't just go ahead and do it.

In contrast, the adopter respondent did not indicate the implications of corporate policy as influencing adoption for community engagement, "We don't have a policy, yet. We have been doing, working on a guidelines document, um, for social media." From an internal perspective however policy implications were present and matched an existing policy of one of the non-adopters, "none of our staff have access to Facebook, Twitter, those sorts of things, except for our communications department. "

These internal constraints amongst the three cases were represented primarily through concerns over resource requirements and uncertainty of the technology. In the case of the non-adopters the perception of the ability to adopt was reflected in this comment regarding available resources for implementation, "The bigger organizations, the bigger municipalities have resources, so they've allocated resources to it and made it happen." The perception of corporate resource implications was supported by the adopter respondent who acknowledged that, "as our Facebook, um, you know, page gets more and more customer interaction, it is gonna require more resources to manage."

The need for additional resources related to the uncertainty of the technology for the adopter respondent,

> I mean the technology changes so quickly. Two years ago, Twitter, I mean [pause] who was using it? Like it was there, but nobody was using it. So staying on top of that and being able to do that requires people.

In comparison the two non-adopters expressed organizational uncertainty in the form of equivocality (Weick, 1990) related to social media, "So, when I started talking about possibly moving to Web 2.0, you know, do we start putting pictures up on Flicker, do we put videos up on YouTube, do we do these different things?" The other non-adopter echoed this confusion over the perceived multiple meanings of social media presenting challenges in determining potential applications of the technology, "Is it gonna tick people off, or is it gonna be a useful tool and, how are we gonna manage this thing?"

Analysis

The data coding and analysis suggests that in the context of municipal community engagement activities social media is an attractive mechanism for awareness generation, sharing information, feedback solicitation, collaboration, and accessibility to the population by decreasing space and expanding time. In these case studies, the frequencies of occurrence outlined in Table 4 show there was enough evidence to support two of the three main hypotheses outlined in Table 5.

Table 4 is a data report from all three interviews that includes the code name and total occurrences across the entire study. This report shows a meaningful relationship between compatibility, relative advantage, and trialability. Observability is only a factor in the context of the participants' observations of use by other government organization use of social media. Complexity does not appear as a dominant factor amongst the

characteristics of innovation. As a result, and in accordance with Rogers' (2003) Diffusion of Innovation Theory, the potential for municipalities to adopt social media for community engagement lies primarily in their ability to fit the technology within their organizational context and match the advantages with values, needs and past experiences.

Table 4. Code Frequency Report. Hypothesis and Results using HyperResearch Qualitative Analysis Software – April 2010.

Code	Total	Min	Max	Mean	Std Dev	Bar Graph
Compatibility (Rogers, 2003)						
C-NA need to access community population	26	8	9	8.667	0.577	
C-NC need to coordinate interactions with community	16	3	8	5.333	2.517	
C-ND need to address demographics	32	4	17	10.667	6.506	
C-NF need for feedback opinion gathering	35	10	13	11.667	1.528	
C-NG need for generating awareness by sharing information	26	7	10	8.667	1.528	
C-VC value collaboration working with population on issues projects	22	4	13	7.333	4.933	
C-VI value community involvement participation	41	8	19	13.667	5.508	
C-VL value learn by doing	14	2	8	4.667	3.055	
C-VS value social networking connecting community	17	3	11	5.667	4.619	
C-VT value transparency open gov't	5	1	3	1.667	1.155	
Complexity (Rogers, 2003)						
CO-C cost implications human and fiscal	16	5	6	5.333	0.577	
CO-CP corporate policy implications	29	5	15	9.667	5.033	
CO-D difficult to understand technology	9	2	5	3	1.732	
CO-DU difficult to use the technology	4	0	2	1.333	1.155	
CO-P privacy implications	3	1	1	1	0	
CO-S security implications	5	0	4	1.667	2.082	
CO-T technology implications	5	0	3	1.677	1.528	
CO-U uncertain of technology implications	13	1	10	4.333	4.933	
Observability (Rogers, 2003)						
O-CC social media used to foster connections	13	2	7	4.333	2.517	
O-G gov't use of social media	92	15	47	30.667	16.01	
O-P private sector use of social media	12	2	6	4	2	
O-PU personal use of social media	18	5	8	6	1.732	
Relative Advantage (Rogers, 2003)						
RA-A access to decrease distance expand time	47	14	18	15.667	2.082	
RA-AS act of sharing knowledge opinion ideas	62	18	26	20.667	4.619	
RA-AW awareness of issues events projects news	63	19	23	21	2	
RA-C consultation to test ideas concepts	31	6	14	10.333	4.041	
RA-CB collaborate with residents	37	10	14	12.333	2.082	
RA-CE cost effectiveness of technology use	18	6	6	6	0	
RA-CO coordination of face-to-face interactions	23	7	9	7.667	1.155	
RA-DI decision implementation to delegate solution implementation	18	6	6	6	0	
R-E effectiveness of social media in like org's	33	7	15	11	4	
RA-EF efficiency of social media for engagement	32	9	12	10.667	1.528	
RA-SN social networking foster diversity size extent of connections	38	9	16	12.667	3.512	
RA-T transparency 'open gov't'	20	6	8	6.667	1.155	
Trialability (Rogers, 2003)						
T-C customization of the tool	25	3	13	8.333	5.033	
T-P past experience with social media	45	10	22	15	6.245	
T-PB project-based	24	4	12	8	4	
T-R relevance of technology for engagement	66	15	35	22	11.269	
Winston (1998)						
A - accelerator	86	20	44	28.667	13.317	
B - brake	76	17	38	25.333	11.15	

Table 5. Hypothesis Results: 3 out of 3 cases supported this hypothesis. In testing the hypothesis on each case study, the following rules were found to apply:

	Applicable rules							
Individual Interviews	1	2	3	4	5	6	7	8
Interview #1	Y	Y	Y	Y	Y	Y	Y	Y
Interview #2	Y	Y	Y	Y	Y	Y	Y	N
Interview #3	Y	Y	Y	Y	Y	Y	N	N

As shown in Table 5, results support the idea that social media has the potential to serve as a tool for municipal government community engagement activities. The data indicates a weak point in Rule #8 as it was supported in only one case. Respondents provided minimal indication that security, privacy, difficulty in use and understanding and, technological implications would negatively impact adoption of social media for community engagement. This could have been because policies regarding the use of social media for community engagement, specifically related to security and privacy, ranged from minimal to non-existent. Furthermore, personal use accompanied by observation of use by other government organizations, may have mitigated perceptions regarding difficulty and technological implications.

Discussion

The purpose of this study was to explore the perceptions and attitudes toward social media for the purpose of community engagement amongst municipal government organizations in order to ascertain why this technology has not been more widely adopted. Conclusions related to this exploration are grounded in the use of prior theory

and concepts, such as those derived from the literature. Rogers (2003) characteristics of innovation and Winston's (1998) model of technology adoption are used as the interpretive framework for considering the main themes and analysis of results regarding the perceptions and attitudes of municipalities towards social media. The Continuum of Community Engagement (Table 1) is used to consider the range of interactions involved in municipal engagement activities.

The selected participants in this study included two municipal organizations that were non-adopters of social media and one adopter of the technology. Furthermore, each respondent represented organizations with varying human and financial resources and diverse demographics. Despite these differences, there were some common themes that emerged from the interviews.

One of the first things evident through the interview data was the prominence of community involvement as the dominant organizational value related to community engagement. This may seem obvious given the Provincial mandate of municipal governments to seek public input (Province of Alberta, 2004) however it affirms an understanding amongst all of the municipalities of a need to interact with the community. As shown in the Code Frequency Report (see Table 4) and interview analysis, this interaction is depicted through the organizational needs of addressing demographics, raising awareness, sharing information and gathering feedback. These needs corresponded with the perceived relative advantages (Rogers, 2003) of generating awareness, sharing opinions/ideas and, accessing the population anytime/anywhere. Organizational needs and relative advantage represent an important connection that is further supplemented by the interview data related to past experience whereby social

media is perceived as a way to give and get information. In relation to the value of community involvement, the needs, perceived advantages and past experience orientate to the perception of social media's compatibility (Rogers, 2003) with one-way and two-way interactions characterized as information sharing and consultation within the Continuum of Community Engagement (Table 1).

Also evident in the interview results was a high level of awareness regarding use of social media by various levels of government. This corresponded with observations across all three cases of implementation on a project basis and customization of the technology. The examples of limiting the features of the technology and establishing timelines for use of the medium, aided perceptions of relevance, efficiency and, effectiveness of the technology for community engagement thus revealing a relationship between relative advantage and trialability (Rogers, 2003). Furthermore, all three cases recognized customization as a means of mitigating perceived human and financial resource implications of adoption.

Additionally, the interview data also revealed that, relevance of the technology was expressed through past experience whereby social media was perceived to facilitate awareness generation, information sharing and feedback solicitation. This was evident across all three cases, and reflects a relationship between relative advantage, compatibility and trialability (Rogers, 2003). Furthermore, the main themes within these particular innovation characteristics (Rogers, 2003) once again highlight the perceived advantage of social media for facilitating one-way and two-way interactions represented through the Continuum of Community Engagement (Table 1).

Finally, all three cases expressed similar perceptions regarding constraints on social media adoption. Corporate implications including policy and resource requirements were identified as adoption barriers (Winston, 1998). As demonstrated through the interview data, current policies amongst all three organizations focus on internal adoption of social media only. Furthermore, resource implications of adoption were met with uncertainty, not only with the non-adopters but, even amongst the adopter organization whereby access to the technology's full features were limited in an attempt to control the impact of adoption. This was supported by the non-adopters who acknowledged the bureaucratic nature of municipalities and the resulting need for control through established regulations.

The primary difference between the adopter and non-adopter organizations, demonstrated through the interview data, was equivocality (Weick, 1990) or, the multiple meanings associated with social media. The non-adopter organizations indicated confusion over the perceived multiple meanings of social media as presenting challenges in determining potential applications of the technology. In contrast, the adopter organization did not express any confusion regarding how to use social media for community engagement.

Conclusion

The five innovation characteristics of relative advantage, trialability, observability, compatibility and complexity (Rogers, 2003) were applied to this study as means of identifying potential accelerators and brakes (Winston, 1998) in the adoption of social media amongst municipal government organizations. Winston's (1998) model of technology adoption was used as the framework to evaluate these characteristics with

municipal government organizations described as the 'social sphere' conditioning and determining adoption.

Rogers (2003) argues that the presence of relative advantage, trialability, observability and compatibility are positive indicators of the potential for technology adoption. The interview data affirms the presence of these characteristics amongst all three cases. Furthermore, the degree of complexity (Rogers, 2003) found across the cases was not significant enough to impede adoption of social media. This indicates the prominence of adoption accelerators over adoption suppressors (Winston, 1998). However, as argued by Winston (1998) it is less so the characteristics of a technology that impact adoption but instead the nature of the social system that influences social forces and constraints thus determining adoption and diffusion. In the context of municipal government organization's adoption of social media, the primacy of this social system illuminated factors limiting adoption potential.

The heteronomous influence

Turner, et al. (2006) argue that, "communication choices are both products of dominant organizational norms and symbolic reinforcements of these norms" (p.241). The most common theme evident in the interview data was the proclivity for one-way and two-way interactions amongst municipal government organizations, which reflects their heteronomous nature (Taylor, 1995). The innovation characteristics of relative advantage, trialability, observability and compatibility consistently emphasized social media adoption in relation to information sharing, awareness generation, feedback solicitation and, access to the population anytime/anywhere. The heteronomy of municipalities promotes communication through information exchange therefore,

interactions between the organization and citizens are fixated on sharing information, generating input from the environment and using this to produce relevant outputs (Taylor, 1995). These findings align with the Continuum of Community Engagement (Table 1) whereby attitudes and perceptions regarding social media supported its application to the engagement activities of information sharing and consultation.

As discussed, not only is there a legislative requirement for municipalities to couple (Valera, 1979) with their environment but also a systematic necessity. The absence of this interaction leaves organizations without the required input to produce relevant outputs. The issue for municipal government organizations lies within the dynamic of requiring input but having to rely on human interaction as the source. As described by Weick (2001) coupling guarantees uncertainty and equivocality, therefore municipalities emphasizing stability, efficiency and control through routine practices and decision-making are likely more inclined to foster interactions that limit the opportunities for exposing uncertainty and equivocality (Daft & Lengel, 1986; Weick, 1990) to the system. Each case acknowledged that adoption of social media does, or would, include customization either on a project basis or by limiting the features of the technology in order to tackle uncertainty and equivocality (Daft & Lengel, 1986; Weick, 1990). This was primarily in reference to the adoption of social media for the engagement activities of information sharing and consultation (Table 1).

Henfridsson (2000) suggests that, "constraint occurs when certain historically rooted attention structures had much stronger institutional support, in the form of identity and technology tradition, than the initial meanings associated with the new technology being introduced" (p.101-102). The final limiting factor for social media adoption

amongst municipalities relates to the interview data regarding policy and resource implications. The heteronomous nature (Taylor, 1995) of municipal organizations promotes first, routine practices and procedures and; second, the receipt of information, collective internal processing and, responding through the production of objects (Cooren, et al., 2006) such as policies, bylaws and procedures that control tasks and activities. All three cases indicated the need for policy development and regulations to guide the use of social media. These actions were deemed necessary to control the resource requirements perceived by the adoption of the technology and, to provide structure and stability (Taylor, 1995) around the application of social media.

Although the participatory nature of the social media supports the full range of interactions described within the Continuum of Community Engagement (Table 1), the heteronomous nature of municipal government organizations presents challenges in applying the technology to its full extent. The adoption of social media for the purpose of community engagement requires acknowledgement and consideration of the social sphere of municipal government organizations.

Recommendations

The research findings suggest that adoption accelerators outweigh adoption suppressors. The persuasive innovation characteristics of relative advantage, observability, trialability and compatibility (Rogers, 2003) already exist amongst non-adopters therefore, adoption processes need to account for the heteronomous nature of municipalities. In accordance with Winston's (1998) suggestion of technology adoption as an evolution, the following recommendations promote a phased approach to facilitate the advancement of social media for the purpose of community engagement. Compilation

of these recommendations was done so in consideration of the research findings, Rogers (2003) variables related to organizational innovativeness and, suggestions from Jue, Alcalde Marr and Kassotakis (2009) regarding the implementation of social media at work.

1) Find the early adopters

To initiate adoption seek out early adopters familiar with various social media applications outside of the organization and have them experiment with the technology within the context of the organization (Jue, et al., 2009). Use these experiences to gain knowledge about the technology and, clarify the relationship between organizational objectives and the adoption of social media (Jue, et al., 2009).

2) Secure social media champions

It is recommended that municipalities identify one or more champions (Rogers, 2003), depending on the organizations size, to facilitate the social media adoption process. Larger organizations would benefit from several champions in order to aid permeation of the initiative. The role of the champions is two fold, 1) build on the knowledge gained through the early adopter experimentation and, 2) boost the idea of social media for community engagement helping to facilitate organizational fit (Rogers, 2003). According to Rogers (2003, p. 415) the important qualities of champions include: the need to possess a key linking position in the organization, be intuitive and analytic regarding various individual aspirations and, demonstrate strong negotiation and interpersonal skills.

3) Use pilot projects to implement

With a champion, or champions, in place begin the process by introducing project-based use of social media. In accordance with the research findings, adoption on a project basis was perceived to alleviate the complexity of policy and resource constraints. This approach facilitates the ability to learn by doing and as such, evaluate the relevance, effectiveness and efficiency in the context of various projects. This will provide the ability for organizational members to experience the applicability of a tool in meeting specific requirements (Orlikowski, 1996; Salkowitz, 2008). Furthermore, this will facilitate redefining social media to fit the organization and bring to light potential organizational structure alterations required with full adoption (Rogers, 2003).

Suggestions for future research

From a practical perspective, this research project produced insight into the various factors influencing social media adoption amongst municipal government organizations. From an academic perspective, the study contributes to the existing body of research related to technology adoption by providing a greater understanding of the influencing factors in the context of municipal organizations. The research was conducted based on individual innovation characteristics therefore future studies examining whether there are differences in factors influencing adoption decisions between public sector organizations and individuals would be valuable.

References

Berners-lee, T. (2000). *Weaving the Web: The original design and ultimate destiny of the world wide web*. New York, NY: HarperCollins.

Bichman, W. Rifkin, S.B. & Shrestha, M. (1989). Towards the measurement of community participation, *World Health Forum, Vol. 10, (3/4)*, 467- 472.

Boyd, D. & Ellison, N. (2008). Social network sites: definition, history, and scholarship. *Journal of Computer-Mediated Communication, Vol. 13,* 210-230.

compete.com (2009). Social networks: Facebook takes over top spot, Twitter climbs. Retrieved April 23, 2010 from http://blog.compete.com/2009/02/09/facebook-myspace-twitter-social-network/?x=0&y=0

comScore Media Metrix. (2008). Eighty-five percent of Brazilian internet users visited a social networking site in September 2008. Retrieved November 18th, 2009 from http://www.comscore.com/Press_Events/Press_Releases/2008/11/Social_Networking_in_Brazil

comScore Media Metrix. (2009a). Russia has world's most engaged social networking audience. Retrieved September 20th, 2009 from http://www.comscore.com/Press_Events/Press_Releases/2009/7/Russia_has_World_s_Most_Engaged_Social_Networking_Audience

Cooren, F., Taylor, J. R. & Van Every, E. J. (2006). *Communication as organizing: Empirical and theoretical explorations in the dynamic of text and conversation.* Mahwah, NJ: Lawrence Erlbaum Associates.

Cormode, G. & Krishnamurthy, B. (2008). Key differences between Web 1.0 and Web. 2.0. *FirstMonday, Vol. 13, No. 6*.

Daft, R. & Lengel, R. (1986). Organizational information requirements, media richness and structural design. *Management Science, Vol. 32, (5)*, 554-571.

de Vaus, D. A. (2001). *Research design in social research.* Thousand Oaks, CA: Sage Publications.

Denzin, N. & Lincoln, Y. (2000). *Handbook of qualitative research*. Thousand Oaks, CA: Sage Publications.

Dutton, W. (2008). The wisdom of collaborative network organizations: Capturing the value of networked individuals. *Prometheus, Vol. 26, (3),* 211-230.

Elections Canada (2008). Voter turnout at federal elections and referendums 1867 – 2008. Retrieved on April 26, 2010 from http://www.elections.ca/content.asp?section=pas&document=turnout&lang=e&textonly=false

Fine, A. (2006). *Momentum: Igniting social change in the connected age.* San Francisco, CA: Jossey-Bass.

Fortunati, L. (2002). The mobile phone: Towards new categories and social relations. *Information, Communication & Society, Vol. 5, (4),* 513-528.

Freedman, T. (2006). Coming of age: An introduction to the new worldwide web. Retrieved April 30, 2010 from http://fullmeasure.co.uk/Coming_of_age_v1-2.pdf

Fuchs, C. (2008). *Internet and society: social theory in the information age.* New York, NY: Routledge.

Granovetter, M. (1973). The Strength of Weak Ties. *The American Journal of Sociology*, *Vol. 78, (6),* 1360-1380.

Gupta, M. P. & Jana, D. (2003). E-government evaluation: a framework and case study. *Government Information Quarterly, Vol. 20,* 365-387.

Harfoush, R. (2009) *Yes we did: An inside look at how social media built the Obama brand.* Berkley, CA: New Riders.

Hartz-Karp, J. (2005). A case study in deliberative democracy: Dialogue with the city. *Journal of Public Deliberation, Vol. 1, (1),* 1-15.

Haythornthwaite, C. (2001). The strength and the impact of new media. *System Sciences.* Proceedings of the 34th Annual Hawaii International Conference on System Sciences, January 3-6, pp. 1-10. Retrieved May 10, 2010 from http://ieeexplore.ieee.org.login.ezproxy.library.ualberta.ca/stamp/stamp.jsp?tp=&arnumber=926199&isnumber=20032

Human Resources and Skills Development Canada. (n.d.) Social participation: Participation in political activities. Retrieved April 26th, 2010 from http://www4.hrsdc.gc.ca/.3ndic.1t.4r@-eng.jsp?iid=68

Jaeger, P. T. (2003). The endless wire: E-government as a global phenonenom. *Government Information Quarterly, Vol. 20,* 323-331.

Jaeger, P. & Thompson, K. (2003). E-government around the world: Lessons, challenges and future directions. *Government Information Quarterly, Vol. 20,* 389-394.

Jarvenpaa, S.L., Lang, K.R., Takeda, Y. & Tuunainen, V., 2003. Mobile commerce at crossroads. *Communications of the ACM, Vol. 26, (12),* 41–44.

Jue, A., Alcalde Marr, J. & Kassotakis, M. (2009). *Social media at work: How networking tools propel organizational performance.* San Francisco, CA: Jossey-Bass.

Kavanough, A., Reese, D.D., Carroll, J. & Rosson, M. (2005). Weak ties in networked communities. *The Information Society, Vol. 21,* 119-131.

Lasica, J. (2008). Civic engagement on the move: How mobile media can serve the public good: A report of the Aspen Institute Roundtable on mobile media and civic engagement. *The Aspen Institute Communications and Society Program.* Retrieved October 2, 2009 from http://www.aspeninstitute.org/policy-work/communications-society/papers-interest/civic-engagement-move-how-mobile-media-can-serve-

Levine, P. (2003). *The new progressive era: Toward a fair and deliberative democracy.* USA: Rowman & Littlefield.

Lindlof, T. & Taylor, B. (2002). Qualitative Communication Research Methods. Thousand Oaks, CA: Sage Publications.

Littlejohn, S. & Foss, K. (2005). Theories of Human Communication. Belmont, CA: Thomson Wadsworth.

Longford, G. (2008). Community networking and civic participation: Surveying the Canadian research landscape. *The Journal of Community Informatics, Vol. 4, (2)*. Retrieved April 28, 2010 from http://www.ci-journal.net/index.php/ciej/article/view/254/409

Lugano, G. (2008). Mobile social networking in theory and practice. *FirstMonday, Vol. 1, (11).*

McGee, R. (2007). *Legal Frameworks for Citizen Participation: A synthesis report.* Logolink Report, Institute for Development Studies, University of Sussex, Brighton, United Kingdom. In Shah, A. (Eds). *Participatory Budgeting*, (pp.247).

Washington, DC: The International Bank for Reconstruction and Development / The World Bank.

Menz, F. (1999). 'Who am I gonna do this with?': Self-organization, ambiguity and decision-making in a business enterprise. *Discourse & Society, Vol. 10, (1),* 101-128.

Meyer, A. & Goes, J. (1998). Organizational assimilation of innovations: A multilevel contextual analysis. *Academy of Management Journal, Vol. 31, (4),* 897-923.

Mohr, L. (1969). Determinants of innovation in organizations. *American Political Science Review, Vol. 63,* 11-126.

Moon, J.M. (2002). The evolution of e-government among municipalities: rhetoric or reality? *Public Administration Review, Vol. 62, (4),* 424-433.

Morgan, G. (1986). *Images of organization*. Beverly Hills, CA: Sage Publications.

O'Reilly, T. (2005). "What is Web 2.0" (30 September). Retrieved April 22, 2010 from http://www.oreilly.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html,

Orlikowski, W. (1996). Evolving with Notes: Organizational change around groupware technology. In Ciborra, C. (ed). *Groupware and teamwork: Invisible aid or technical hinderance?* New York, NY: Wiley.

Orlikowski, W. (2000). Using technology and constituting structures: a practice lens of studying technology in organizations. *Organization Science, Vol. 11, (4),* 404-428.

Pagani, M. (2004). Determinants of adoption of third generation mobile multimedia services. *Journal of Interactive Marketing, Vol. 18, (3)* 46– 59.

Quan-Haase, A., Wellman, B., Witte, J. & Hampton, K. (2001). Does the internet

increase, decrease, or supplement social capital? Social networks, participation, and community commitment. *American Behavioral Scientist*, *Vol. 45,* 436 – 455.

Relyea, H. (2002). E-gov: Introduction and overview. *Government Information Quarterly, Vol. 19, (1),* 9-35.

Rheingold, H. (2000). *The virtual community*. Cambridge, MA: MIT Press.

Rice, R. & Webster, J. (2002) Adoption, diffusion, and use of new media. In Carolyn A. Lin and David J. Akin, (Eds.), *Communication Technology and Society: Audience adoption and use,* (pp. 191-277). Creskill, N.J.: Hampton Press.

Rogers, E. (1991). The critical mass in the diffusion of interactive technologies in organizations. In Kenneth L. Kraemer, James I, Cash, Jr., and Jay F. Nunmaker, Jr., (Eds.), *The Information System Research Challenges: Survey Research Methods*, Boston: Harvard Business School Press, 245-263.

Rogers, E. (2003). *Diffusion of Innovations.* (5th Eds.). New York, NY: Free Press.

Salkowitz, R. (2008). *Generation blend: managing across the technology age gap.* Hoboken, NJ: John Wiley & Sons, Inc.

Silverman, D. (2005*). Doing qualitative research*. Thousand Oaks, CA: Sage Publications.

Shah, A. (2007). *Participatory Budgeting.* Washington, DC: The International Bank for Reconstruction and Development / The World Bank.

Shirky, C. (2008). *Here comes everybody: the power of organizing without organizations*. New York, NY: Penguin Press.

Statistics Canada. (2003) *2003 General social survey on social engagement, cycle 17: An overview of findings*. (Catalogue No. 89-598-XIE). Ottawa, ON: Ministry of

Industry. Retrieved April 28, 2010 from http://www.statcan.gc.ca/cgi-bin/af-fdr.cgi?l=eng&loc=http://www.statcan.gc.ca/pub/89-598-x/89-598-x2003001-eng.pdf&t=2003%20General%20Social%20Survey%20on%20Social%20Engagement%20Cycle%2017:%20An%20Overview%20of%20Findings

Statistics Canada. (2008). *2008 General social survey: Selected tables on social engagement.* (Catalogue No. 89-640-X). Ottawa, ON: Ministry of Industry. Retrieved April 28, 2010 from http://www.statcan.gc.ca/cgi-bin/af-fdr.cgi?l=eng&loc=http://www.statcan.gc.ca/pub/89-640-x/89-640-x2009001-eng.pdf&t=2008%20General%20Social%20Survey:%20Selected%20Tables%20on%20Social%20Engagement

Statistics Canada. (2009). Federal general elections, by electors, ballots cast and voter participation. Retrieved September 25th, 2009 from http://www40.statcan.gc.ca/l01/cst01/govt09c-eng.htm

Stenbacka, C. (2001). Qualitative research requires quality concepts of its own. *Management Decision, 39 (7),* 551-555.

Straus A. & Corbin, J. (1990). *Basics of qualitative research and grounded theory procedures and techniques.* Newbury Park, CA: Sage Publications.

Straus A. & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory.* Thousand Oaks, CA: Sage Publications.

Steyaert, J. (2000). Local governments online and the role of the resident: Government shop versus electronic community. *Social Science Computer Review, Vol. 18, (1),* 3-16.

Surowiecki, J. (2004). *Wisdom of the crowds: why the many are smarter than the few and how the collective wisdom shapes business, economics, societies and nations.* New York, NY: Doubleday.

Tapscott, D. & Williams, A. (2008). *Wikinomics: how mass collaboration changes everything.* New York, NY: Penguin Press.

The Nielsen Company. (2009a). Global faces and networked places: A Nielsen report on social networking's new global footprint. Retrieved April 26, 2010 from http://blog.nielsen.com/nielsenwire/global/social-networking-new-global-footprint/

The Neilsen Company. (2009b). Teens don't tweet: Twitter's growth not fueled by youth. Retrieved May 4, 2010 from http://blog.nielsen.com/nielsenwire/online_mobile/teens-dont-tweet-twitters-growth-not-fueled-by-youth/

The Neilsen Company. (2010). Facebook and Twitter post large year over year gains in unique users. Retrieved May 4, 2010 from http://blog.nielsen.com/nielsenwire/global/facebook-and-twitter-post-large-year-over-year-gains-in-unique-users/

Tung, L. & Reick, O. (2005). Adoption of electronic government services among business organizations in Singapore. *Journal of Strategic Information Systems, Vol. 14,* 417-440.

Turner, J., Grube, J., Tinsley, C., Lee, C. & O'Pell, C. (2006). Exploring the dominant media: How does media use reflect organizational norms and affect performance? *Journal of Business Communication, Vol. 43, (3),* 220-250.

Tyre, M. & Orlikowski, W. (1994). Windows of opportunity: Temporal patterns of technological adaptation in organizations. *Organizations Science, Vol. 5, (1),* 98-118.

Valente, T. (1996). Social networks thresholds in the diffusion of innovations. *Social Networks, Vol. 18,* 69-89.

Valera, F.J. (1979). *Principles of biological autonomy.* New York, NY: Appleton & Lange.

Voss, C., Tsikriktsis, N. & Frohlich, M. (2003). Case research in operations management. *International Journal of Operations & Production Management, Vol. 22, (2),* 195- 219.

Weick, K. (1990). Technology as equivoque: Sensemaking in new technologies. In P. S. Goodman, L. S. Sproull & Associated (Eds.), *Technology and organizations*, (pp. 1-44). San Francisco, CA: Jossey-Bass.

Weick, K. (2001). *Making sense of the organization.* Victoria, Australia: Blackwell Publishing.

Winston, B. (1998) Introduction: A storm from paradise – technological innovation, diffusion and suppression, and Chapter 1, The telegraph. *Media technology and society: A history from the telegraph to the Internet*, (pp. 1-29). New York, NY: Routledge,

Yin, R. (2003). *Case Study Research: Designs and Methods*. Thousand Oaks, CA: Sage.

Youtube. (n.d). Youtube Fact Sheet. Retrieved May 4, 2010 from http://www.youtube.com/t/fact_sheet

Appendix A

Alberta Capital Region Social Media Review

Alberta Capital Region Municipality	Facebook	Twitter	Other Social Media
Beaumont			
Bon Accord			
Bruderheim			
Calmar			
Devon			
Edmonton	•	•	youtube
Fort Saskatchewan			
Gibbons			
Lamont County			
Town of Lamont			
Leduc County			
City of Leduc	•	•	
Legal			
Mornville			
New Sarepta			
Parkland County			
Redwater			
St. Albert	•		
Spruce Grove	•	•	youtube
Stony Plain			
Strathcona County			
Sturgeon County			
Thorsby			
Wabamum			
Warburg			
TOTALS	4	3	2

Appendix B

Code List

Innovation Characteristic (Source: Rogers, 2003)	**Code**	**Description**
Relative Advantage – the degree to which an innovation is perceived as better than the idea it supersedes. This can be measured in economic terms, but social prestige factors, convenience, and satisfaction are also the most important factors. The greater the perceived relative advantage the more rapid the adoption.	RA-AS	Act of sharing (using mediated technology to share information, knowledge, opinions, ideas and creativity online through social media)
	RA–CO	Coordination (using mediated technologies to coordinate interactions, often face-to-face)
	RA–C	Consultation (using mediated technology to test ideas, develop concepts)
	RA–CB	Collaboration (using mediated technology to develop collaborate with residents)
	RA–DI	Decision Implementation (using mediated technology to delegate some or all aspects of solution implementation)
	RA–T	Transparency (using mediated technology to promote "open" government)
	RA–SN	Social Networks (using mediated technology to foster density, diversity, size or extent of connections to community)
	RA–A	Access (using mediated technology to decrease distance and expand time)
	RA-AW	Awareness (using mediated technology to raise awareness of issues, events, projects, news that impact residents)
	RA-CE	Cost effectiveness of using mediated technology for engagement
	RA-E	Efficiency of using mediated technology for engagement
	RA-EF	Effectiveness of social media in 'like' organizations

Innovation Characteristic (Source: Rogers, 2003)	**Code**	**Description**
Compatibility – the degree to which an innovation is perceived as being consistent with the existing values, past experiences and needs of potential adopters. An idea incompatible with the values and norms of a social system will not be adopted as rapidly as an innovation that is compatible.	C-ND	Need to address various demographics
	C-VI	Values community involvement or participation
	C-VC	Values collaboration (working with the community population on issues/projects)
	C-NG	Need to generate awareness or share information, issues or projects
	C-NF	Need for feedback/opinion gathering
	C-VS	Values social networking (connecting people/groups/organizations in the community)
	C-NC	Need to coordinate interactions with community population
	C-NA	Need to access the community population
	C-VT	Values transparency ('open' government)
Trialability – the degree to which an innovation may be experimented with on a limited basis. New ideas that can be tried on the installment plan will generally be adopted more quickly than innovations that are not divisible. An innovation that is triable equates to less uncertainty.	T-L	Learn by doing (willingness to learn about the technology by using it)
	T-P	Past experience with social media (relates to experience using the technology)
	T-PB	Project-based (use of social media based on a specific topic/project)
	T-C	Customization of the tool
	T-R	Relevance of technology in the context of engagement
Observability – the degree to which the results of an innovation are visible to others. The easier it is to see the results of an innovation, the more likely they are to adopt.	O-G	Government use of social media
	O-P	Private sector use of social media
	O-PU	Personal use of social media
	O-CC	Social media used to foster connections (build social ties; bridging and bonding, Granovetter, 1973)

Innovation Characteristic (Source: Rogers, 2003)	**Code**	**Description**
Complexity – the degree to which an innovation is perceived as difficult to understand and use.	CO-D	Difficult to understand the technology
	CO-DU	Difficult to use the technology
	CO-S	Security implications
	CO-P	Privacy implications
	CO-U	Uncertain of technology implications
	CO-C	Cost implications of using the technology (fiscal and human resources impacted)
	CO-CP	Corporate policy implications of using the technology
	CO-T	Technological implications (broadband access, hardware, technological infrastructure)

Appendix C

Chain of Evidence (Yin, 2003)

Citations to specific evidentiary sources in the case study database

Interviews will be conducted in the interviewee's workplace. Questions from the case study protocol will be followed.

Source of evidence – triangulation approach using multiple sources

1. Participant Interviews (open ended) – focused on the organizations' understanding, perceptions and attitude towards community engagement and social media
2. Literature review – relevant case studies, latest research in the field
3. A case study of three Alberta Capital Region municipalities that combines personal experience with the literature review

Case study questions

Guiding Question:

What are some of the main community engagement activities your organization uses? (e.g. open house, focus group, online survey, opinion poll)

Probes:

- What organizational needs are you attempting to address through these activities?
- Are there activities that are more useful than others? Why?
- What value do these activities bring to your organization? Provide examples.

Guiding Question:

What factors do you feel influence the choice of community engagement activity?

Probes:

- What are some of the reasons your organization would choose one type of activity over the other?
- What do you consider when choosing the activity? (resource requirements, efficiency, control, innovation)
- Do the organization's values play a role in the choice? Provide examples.

Guiding Question:

What are some of your observations about the use of social media?

Probes:

- Are you aware of other municipalities, groups or associations related to your organization using social media (Facebook, MySpace, Twitter, Linked In)? If yes, what do you think influenced their decision to try this technology? If no, what factors do you think are holding organizations back from trying this technology?
- What advantages do you think social media offers municipalities?
- What challenges do you think social media presents for municipalities?
- What do you think the differences are between government, private sector and personal use of social media?

Guiding Question:

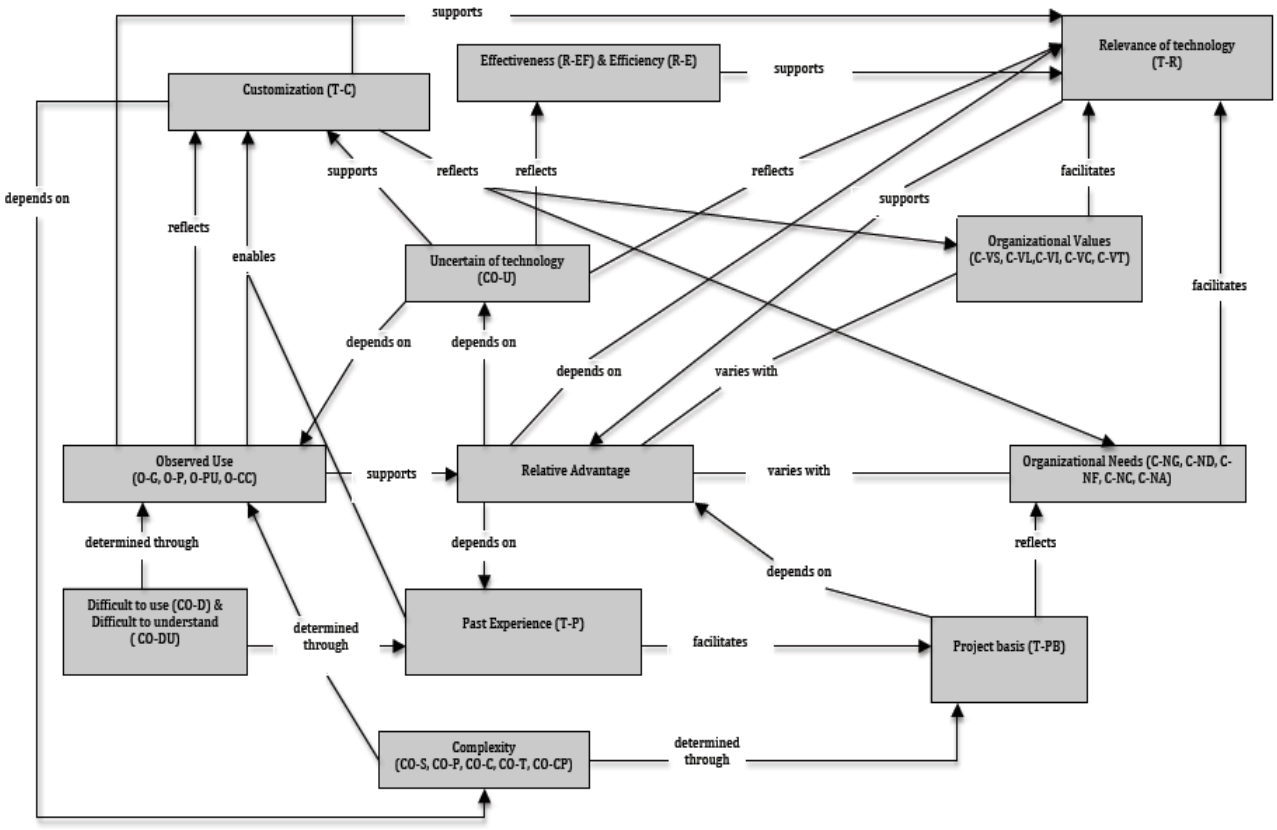
What factors do you feel influence a municipality's choice to use social media for community engagement?

Probes:

- What challenges or opportunities do social media present for community engagement activities versus more 'traditional' methods?
- What factors enhance or constrain your organizations use of social media (e.g. technological constraints, resource requirements, lack of control over the message, political environment, security, privacy)?
- Overall, do you think social media could improve community engagement activities?

Appendix D

Code Map



KEY: Based on five characteristics of innovations (Rogers, 2003)

- Relative advantage
- Compatability
- Complexity
- Trialability
- Observability

Appendix E

Information letter

(Date)

(Participant Name)
(Participant Address 1)
(Participant Address 2)

Dear (Participant Name),

My name is Maria deBruijn and I am a graduate student with the University of Alberta in my final year of the Master of Arts in Communications and Technology (MACT) Program. Currently, I am conducting research for my Masters to examine the social context in which municipal government organizations adopt communication technologies for community engagement activities as a means of considering how this influences interaction between the organization and residents. Drawing on interviews with individual municipal government employees about their experiences with communication technologies in community engagement activities, it will be argued that argued that municipal government's could use knowledge of social media and mobile technologies to encourage use of these technologies as a means of encouraging participation in collective efforts thus influencing the interaction between local government and their residents.

The reason I have contacted you is because I have identified your organization as a possible candidate for this case study, and I would like to invite you to participate in a personal interview that will be conducted by me. Participation is purely voluntary and it is also completely anonymous and confidential.
The following are some questions you may have about your level of involvement in the study.

What is the time commitment?
I will be conducting up to three individual case studies that involve a personal interview that may take between one and two hours of your time and may involve a short follow-up interview that may take up to an hour. This will involve a variety of open questions, which explore the use of social media in municipal government. The study will also draw from observations and documents to provide context.

What is the benefit of participating?
By participating in this study, you are helping to explore how communication technology could be used to expand interactions between local governments and residents.

What about confidentiality?
All participants' personal information including name, address, phone number or e-mails will be kept confidential by the researcher and will be destroyed as soon as the data collection is completed. Participant identities will not be revealed in any published documents and the interview questions do not address any information that could identify the respondents.

The results will be transcribed, and only the researcher and transcriber will have access to any data collected including recorded sounds, which will be stored in a secure database accessible only through authorized password. Any recorded sounds will be used for the purpose of analyzing data and are not intended for presenting research findings in any way. Code names will be established to avoid any possible risks that could affect the participant's position, reputation or status in the workplace.

Are there any risks associated with participating?

Audio recording equipment will be used to capture your responses. The data will then be transcribed, in which the person who has access to the data will be required to sign a confidentiality agreement. The audio recordings and transcript will be stored in a secure database for five years and will be destroyed after this time in accordance with University of Alberta guidelines. Due to the anonymous nature of this research, combined with the fact that this research is focused on understanding the organization's experiences with communication technology in community engagement projects, there are no related risks associated by participating in this study.

The data will be combined with information collected through a literature review as part of my final research project for the MACT program and will be submitted to my research advisor. The research may be presented in scholarly journals or conferences.

I am interested in this research topic. How can I participate?
If you are interested in participating, I will work with you to set-up an interview time that is convenient for you. Please complete the Participant Sign-up and Consent Form attached and return it directly to me.

If I agree to participate, can I withdraw at anytime?
You are free to opt out of the study one month after the interview has taken place without prejudice to pre-existing entitlements, and to continuing and meaningful opportunities for deciding whether or not to continue to participate. There are no penalties for opting out. The data collected will be withdrawn from the database and destroyed. It will not be included in the study.

Will I have access to the results of the study?
As a result of your participation you will have access to the data collected. A copy of the report of the research findings is available upon request via e-mail to the researcher at debruijn.m@gmail.com.

The University of Alberta adheres to strict ethical practices to ensure the protection of those individuals who participate in research studies. The plan for this study has been reviewed for its adherence to ethical guidelines and approved by the Faculties of Education, Extension, Augustana and Campus Saint Jean Research Ethics Board (EEASJ REB) at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Chair of the EEASJ REB c/o (780) 492-2614.

If you have any questions, please e-mail me at debruijn.m@gmail.com or call (780) 963.9694. You can also contact my research advisor Dr. Gordon Gow at ggow@ualberta.ca for more information about the graduate program or the University standards.

I appreciate your support for this research endeavor.

Sincerely,

Maria deBruijn
Graduate Student
Masters of Arts in Communication and Technology
University of Alberta
debruijn.m@gmail.com

The personal information requested on this form is collected under the authority of Section 33(c) of the Alberta Freedom of Information and Protection of Privacy Act for administrative purposes only.

Appendix F

Participant Consent

Title of project: **Connected citizenry: An exploration of local government adoption of social media for community engagement**

Researcher: Maria deBruijn, Graduate Student
Master of Arts in Communications and Technology
Faculty of Extension, University of Alberta

	YES	NO
Do you understand that you have been invited to participate in a study?	☐	☐
Have you read the letter informing you of and describing the purpose of the study as well as the participation requirements and time commitment?	☐	☐
Do you understand the benefits and risks associated with participating in this study?	☐	☐
Have you had the opportunity to discuss and ask questions about the study?	☐	☐
Do you understand that you are free to opt out of the study one month after the initial interview has been conducted without penalty and have my data withdrawn from the database and not included in the study?	☐	☐
Has the issue of confidentiality been adequately explained to you?	☐	☐
Do you understand who will have access to the data collected (researcher, project advisor and transcriber) through your participation?	☐	☐

This study was explained to me by: _____

I acknowledge that the research procedures have been explained to me, and that any questions I have asked have been adequately addressed. I understand that I may contact the person identified in the information letter at any time if I have further questions about this research study. I have been assured that the personal records relating to this study will be kept anonymous. I understand that I am free to opt out of participating one month after the initial interview has been conducted and I will not be asked to provide a reason for withdrawal.

The plan for this study has been reviewed for its adherence to ethical guidelines and approved by the Faculties of Education, Extension, Augustana and Campus Saint Jean Research Ethics Board (EEASJ REB) at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Chair of the EEASJ REB c/o (780) 492-2614.Two copies of this Participant Consent form have been provided, one signed and returned to the researcher and one for the participant to keep for their own records.

I am interested in participating in this study. Yes ☐ No ☐

Participant name:_____ Phone: _____

E-mail:_____

_____ _____
Signature of participant Date

The personal information requested on this form is collected under the authority of Section 33(c) of the Alberta Freedom of Information and Protection of Privacy Act for administrative purposes only.

Procedures for Obtaining Informed Consent (Article 66.9.4)

66. Human Research - University of Alberta Standards for the Protection of Human Research Participants

Researchers shall provide to prospective subjects, or to authorized third parties, full and frank disclosure of all information relevant to free and informed consent. Throughout the free and informed consent process, the researcher must ensure that prospective participants are given adequate opportunities to discuss and contemplate their participation. Subject to the exception in Section 66.9.3, at the commencement of the free and informed consent process, researchers or their qualified designated representatives shall provide prospective participants, as a minimum, with the following:

a) information that the individual is being invited to participate in a research project;

b) comprehensible statement of the research purpose, the identity of the researcher, the expected duration and nature of participation, and a description of research procedures;

c) a comprehensible description of reasonably foreseeable harms and benefits that may arise from research participation, as well as the likely consequences of non-action, particularly in research related to treatment, or where invasive methodologies are involved, or where there is a potential for physical or psychological harm;

d) an assurance that prospective subjects are free not to participate, have the right to withdraw at any time without prejudice to pre-existing entitlements, and shall be given continuing and meaningful opportunities for deciding whether or not to continue to participate;

e) the possibility of commercialization of research findings, and the presence of any apparent or actual or potential conflict of interest on the part of researchers, their institutions or sponsors; and

f) the name, and contact information for, a person who may be contacted in the case of concerns, complaints, or consequences.

Appendix G

Confidentiality Agreement

This form may be used for individuals hired to conduct specific research tasks, e.g., recording or editing image or sound data, transcribing, interpreting, translating, entering data, destroying data.

Project title – Connected citizenry: An exploration of local government adoption of social media for community engagement

I, _____, the interpreter/translator, have been hired to transcribe voice recordings of the personal interviews conducted by the researcher, Maria deBruijn.

I agree to -

1. keep all the research information shared with me confidential by not discussing or sharing the research information in any form or format (e.g., disks, tapes, transcripts) with anyone other than the *Researcher(s)*.

2. keep all research information in any form or format (e.g., disks, tapes, transcripts) secure while it is in my possession.

3. return all research information in any form or format (e.g., disks, tapes, transcripts) to the *Researcher(s)* when I have completed the research tasks.

4. after consulting with the *Researcher(s),* erase or destroy all research information in any form or format regarding this research project that is not returnable to the *Researcher(s)* (e.g., information stored on computer hard drive).

_____	_____	_____
(Print Name)	(Signature)	(Date)

Researcher(s)

Maria deBruijn	_____	_____
(Print Name)	(Signature)	(Date)