Chapter 3
Moving Toward Web 2.0-Enhanced E-Government in Small-Town Pennsylvania

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Abstract This chapter on adoption and use of Web 2.0 technologies by local governments in Pennsylvania represents a part of an ongoing research project to investigate the nature and extent of collaborative initiatives between public and academic institutions in small college towns in support of e-government innovation. In this research, e-government is approached as a sociotechnical, dynamic system situated within a complex context (people, technology, and location). The case study was guided by a combination of socio-technical theory and grounded theory. A study of one municipality in Central Pennsylvania (USA) revealed the transformative potential of e-government through the adoption of Web 2.0 technologies. The municipal social media toolbox offered citizens a variety of complementary yet unique ways (e.g., Facebook and Twitter) to stay connected with their municipal government and its various departments. The study identified four major purposes of social media integration, including emergency notification, citizen participation, public safety, and promotion of the official municipal website. This case represents a continuum of e-government adoption and municipal transformation from addressing problems and challenges along the way to finding successful solutions.

3.1 Background

Since the early 1990s, researchers have viewed e-government initiatives as an innovation mechanism aimed at reaching greater levels of effectiveness and interoperability in the public sector (Ho 2002; Reddick and Aikins 2012). As e-government evolves, it brings about the new environment of e-governance to municipal governments and helps stimulate the atmosphere of growing citizen engagement and democratic participation. In fact, Web 2.0 is often called a transformative technology

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I. Boughzala et al. (eds.), *Case Studies in e-Government 2.0, Changing Citizen Relationships,* DOI 10.1007/978-3-319-08081-9_3,

since it is slowly changing the way city halls across America begin to interact with their various constituencies (Eggers 2005; Mergel et al. 2009). Moreover, social media play a role in creating a more transparent, participatory and collaborative government.

While use of municipal websites for citizen participation is less common than electronic dissemination of government information and e-services delivery, there are examples at the local level of online town meetings and deliberative polling of panels of citizens. These emerging vehicles for two-way communication between officials and citizens enhance and complement a more traditional email interaction. E-government is being pushed beyond static government websites, because the new sociotechnological environment of Web 2.0 enables users of information to play a more active role and willingly engage in adding and sharing information and knowledge. A number of studies (Bertot et al. 2012; Eggers 2005; Freeman and Loo 2009; Joseph 2012; Kuzma 2010; Peedu and Lamas 2011; Petrik 2010) report that, in recent years, governments started to experience pressure to lay the foundation for utilizing such modern Web 2.0 tools as Facebook and Twitter. Some authors suggest that this emerging trend, in part stimulated by the exponential growth of Web 2.0 subscribers[1], allows governments to tap into "the wisdom of crowds in the public service and governance processes, which are expected to increase the responsiveness of public organizations" (Anttiroiko 2010, p. 19). Revitalizing citizens' satisfaction with e-services without compromising the quality of service delivery may potentially become a side effect of using Web 2.0 to increase government responsiveness.

In the United States, President's Obama's Open Government initiative of 2009 (Obama 2009) called for establishing a system of transparency, public participation and collaboration in government through the use of new technologies. President Obama's memorandum marked the beginning of the so-called "Government 2.0 movement." Partly in response to this initiative, the use of Web 2.0 technologies in the U.S. has become a growing topic of interest for researchers and practitioners in the public sector. However, implementation of Facebook pages, Twitter accounts, and YouTube channels remains more prevalent among the federal agencies than among local government organizations. As Mergel (2010) noted in her article in *PA Times*, a majority of federal agencies and departments established at least one Facebook organizational page and at least one official Twitter account in addition to blogs, Facebook fan pages and YouTube channels in the time that passed since issuing the Open Government initiative of 2009. In contrast, a surge toward social media integration into their web presence is yet to fully reach municipal governments. On the positive note, municipal governments in the United States and United Kingdom have already started to experiment with social media applications in such key operational areas as public safety, emergency management, and citizen engagement. In 2012, a few examples of successful use of social media by municipal governments in the U.S. (including Evanston, IL; Fort Bend TX; Philadelphia, PA; Alexandria,

[1] According to World Internet Stats (http://www.internetworldstats.com/america.htm#us), on 30 September 2012, there were 166,029,240 Facebook subscribers, with penetration rate of 52.9%.

VA; Arlington, VA among others) were reported in the literature (Kavanaugh et al. 2012; Perlman 2012). Outside the U.S., there was a study done in 2011 about the Minu Viljandi (Estonia) municipal Web 2.0 e-service, which was aimed at providing citizens with the "opportunity to start a dialogue with the city government in public space issues and to participate in decision making" (Peedu and Lamas 2011). Minu Viljandi e-service also included such Web 2.0 design elements as geo-tags for improving location-based communication, comments, Facebook share/like, and rating of local initiatives (agree, disagree, neutral).

As a matter of fact, researchers have already started the discussion of a variety of ways in which local government could utilize Web 2.0 in e-government, including e-discussion forums and various other municipal practices (Petrik 2010). Many of these practices are aimed at engaging citizens and encouraging them to start a dialogue with a municipal government and contribute to the process of decision-making at the local level. A variety of Web 2.0 design elements such as geo-tags for improving location-based communication, Facebook share/like, rating of local initiatives (agree, disagree, neutral) may soon become municipal government reality.

Some scholars interested in technological innovativeness of local governments have observed that municipalities have widely embraced the Internet as a tool to communicate and disseminate information to citizens in a manner that is most useful to them and facilitate users' involvement in local public issues. The Web 2.0 technologies seem capable of providing needed access to increasingly more politically engaged citizens and support the growing ability of people to participate effectively in local community affairs.

Case studies in municipal e-government are rare and often tend to cover only certain practical issues in public policy and administration. Such practical matters could address a range of issues: from dealing with problems associated with reforming and restructuring information management in a local government setting, discussion of the project management complexities of developing an application that require interdepartmental coordination of efforts to overcoming challenges of revamping a municipal IT department. This chapter expands that research by exploring the ways in which new collaborative technologies known as "Web 2.0" affect e-government development in small-town Pennsylvania.

3.2 The Case Study Objectives

Discovery and exploration of potentially successful attempts at integration of Web 2.0 interactive tools into the practice of municipal governments may lead to more effective ways of service delivery for local communities, and may encourage greater civic participation and increase citizen trust in government. Web 2.0 collaborative tools such as Facebook, YouTube, and Twitter represent the cutting edge of IT innovation in public administration at the local level, especially at the time of increasingly influential and interwoven societal and technological innovations. Society is, arguably, at the next iteration in the evolution of e-government.

The primary objectives of this research are: (1) to investigate the potential for small municipal governments of Web 2.0 adoption, and (2) to identify factors that could help these governments take a transformative step toward encouraging greater e-participation and promoting e-democracy. The rationale for this research is to expand our current understanding of adoption and implementation of Web 2.0 technologies in small municipalities. To meet these objectives, this chapter investigates how one small municipality, the Borough of State College in Central Pennsylvania, uses social media tools in an attempt to enhance and promote its official web portal, and to encourage greater public participation in local community affairs.

3.3 Research Design

The case presented here is part of a larger study of the advancement of e-government in small-town Pennsylvania. This chapter focuses on government usage of social media in one municipality in the Commonwealth of Pennsylvania (PA), its struggles in finding successful implementation strategies and challenges that are still waiting to be overcome. The official government website of the Borough of State College (http://www.statecollegepa.us/), a college town[2] in Central PA, is the basis for this case study.

The combination of sociotechnical theory (STT) and grounded theory (GT) established the conceptual foundation for this research. The purpose of grounded theory was to fill in the contextual details within the most fundamental STT constructs such as technology, organization and society. In traditional information systems (IS) literature, a sociotechnical system represents an organization that needs to utilize new technologies to gain or sustain a competitive advantage (Trist 1981). Sociotechnical principles and approaches make successful organizational change with respect to technology possible. In later years, several scholars successfully used sociotechnical principles as grounding for making e-government a highly functional sociotechnical system (Damodaran et al. 2005). As Damodaran and her co-authors (2005) point out, e-government, just like any other successful sociotechnical system requires simultaneous configuration of all aspects of the system: technical, organizational and social (p. 7).

In this chapter, local e-government is viewed as a sociotechnical, dynamic system situated within a complex context, which includes people, technology, location, etc. While STT provided a high-level conceptual framework for gathering qualitative data about e-government in college towns in one state, the authors used grounded theory as an analytical methodological tool. Using the grounded theory approach enabled authors to examine key factors that may affect functionalities of local e-government systems and analyze the ways in which small municipality can use social media. Consistent with the current literature on Web 2.0 applications in the public sector, the authors' interpretation of social media includes online

[2] Based on modified Gumprecht's (2008) classification of American college towns.

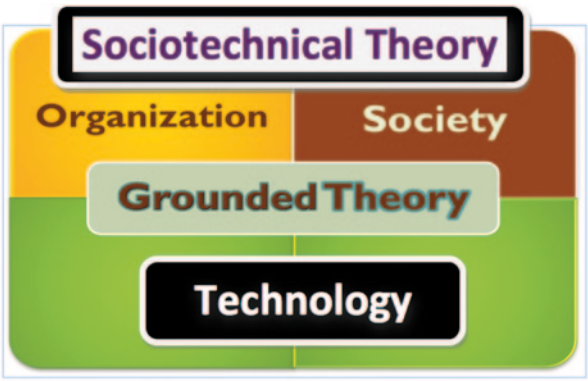

Fig. 3.1 Building blocks of GT within e-Government STS

communication communities (Twitter), social and special interest networks (Facebook, LinkedIn), user-generated content sharing services (YouTube) that emphasizes collaborative nature and social dimension of these technologies, which could be of potential value for all public institutions.

The authors approached the synthesis of grounded theory and sociotechnical theory as complementary, and such combination of GT and STT is illustrated below. Figure 3.1 shows how grounded theory approach is intended to fill in the contextual details of the foundational constructs of STT (organization, society and technology).

3.4 Methods

The case chosen for this study represents one of the common types of Pennsylvania small municipalities—a borough (with population under 45,000 residents). Since this selected site houses a public university, it can also be classified as a "college town". The governing body of the borough in Pennsylvania is an elected council, which appoints a manager, or the chief administrative officer. At the time of the study, the selected research site had a college-educated manager.

A total of five semi-structured individual interviews were held with the elected and appointed officers of the municipality over a four-month period (January–April) in 2013. The data collection for this case study included face-to-face interviews with the organization's leadership and municipal staff responsible for planning and community engagement, IT project management, communications and social media. Interviews were used as primary data collection instrument. Participants were identified using a combination of selective, snowball and theoretical sampling techniques.

For the purpose of methodological triangulation, the authors examined the official web portal of the municipality for the presence of icons for any of social media tools such as Facebook, Twitter, LinkedIn, and YouTube and analyzed the content

of organizational Facebook and Twitter pages based on publicly available data. The case examined below describes the experiences and achievements of State College in Central Pennsylvania. At the time of the study, it was the only small municipality in the state that had adopted Web 2.0 technologies.

3.5 Case Description

Introducing the Borough of State College

The Borough of State College[3] is located in Central Pennsylvania, and, as per U.S. Census 2010, the Borough population was 42,034. That fact makes State College the most densely populated borough in the Commonwealth (9500 per square mile), while it has a land area of only 5 square miles. The municipality[4] was first incorporated in 1896. State College has a council-manager form of government, where the Mayor and the Council of seven members are elected officers of the municipality, and the professional manager is appointed by Council for an indefinite term to serve as the Chief Executive and Administrative Officer. As mentioned on the website, professionally managed communities are consistently ranked among America's best places to live.[5] Administrative staff includes the Communications and Special Projects Coordinator, who is also responsible for managing social media components of e-government in the municipality. There are nine municipal departments that operate under the supervision of the Manager including the Department of Information Technology. All together, the Borough employed 175 employees at the time of the study.

The Borough is home to the Pennsylvania State University, the land-grant institution founded in 1855.At present, the Pennsylvania State University's ranking in the 2014 edition of the Best Colleges is 37 among National Universities in the United States.[6]

The Goals of the State College Borough Portal Redesign

The municipal portal redesign project was initiated in 2011. At that time, the Borough administration was concerned about the old website shortcomings, especially those related to failed community engagement online initiatives (Levy 2011). In

[3] Codes of Ordinances of the Borough of State College, https://pastatecollege2.civicplus.com/index.aspx?NID=1276.

[4] The municipality operates under the terms and provisions of the Home Rule Charter since 1976.

[5] https://pa-statecollege2.civicplus.com/index.aspx?nid=2050.

[6] Pennsylvania State University—University Park, http://colleges.usnews.rankingsandreviews.com/best-colleges/pennsylvania-state-university-university-park-6965.

2010, the Borough participated in a pilot project with several other communities such as Decatur (GA) and Palo Alto (CA), all members of the Alliance for Innovation.[7] The project was called *Open City Hall*, an online public comment platform monitored by Peak Democracy (http://www.peakdemocracy.com). That initiative was intended to stimulate civic engagement in the community. Open City Hall has been linked to Facebook and Twitter, in addition to several local media outlets that agreed to put a button on their web pages. At that time, the Facebook site has already been developed but was inactive because the borough needed a staff to monitor and moderate it.

The pilot project engendered little citizen engagement. Consequently, the Borough Council discontinued the project after the trial. Besides the fact that Open City Hall did not generate sufficient engagement level among State College residents, there were other challenges related to staff shortage, financial and content management concerns. State College was the only community that did not allow anonymous postings. However, the Borough Manager was determined to support the underlying goals of the pilot project:

> My opinion and my recommendation as a manager was that it provided a relatively inexpensive method for people to participate in government. And even if they were from Timbaktu … if they had something worthwhile to say, it was worth hearing. We should have the means and the ability to manage that. I felt that it was an important tool to allow civic engagement for people that otherwise couldn't find a way to get out to a meeting at 7 o'clock at night and participate

The need to maintain the spirit of managerial innovativeness was a valuable lesson to learn from this abbreviated pilot project, along with the call for the overhaul of the old municipal website. The Borough's IT department worked on the website makeover project in partnership with a private company called CivicPlus[8], well known for its innovative *Government Content Management System* (GCMS). The municipal IT staff sought input from both internal and external sources about the anticipated "look and feel" of the new municipal portal in addition to other desirable characteristics and functionalities. The IT department organized a special committee comprised of municipal employees from each department within the Borough who were most knowledgeable about the inner workings of their respective departments, the goals they were trying to accomplish, and the innovative ways their department wanted to communicate with citizens. All redesign-related decisions were made based on the general consensus of the entire committee. The redesign team understood the importance of seeking input from citizens, businesses and community organizations that could potentially use the website in the future. The project management team conducted a website survey at the beginning of the redesign process, which enabled the municipality to gain more accurate and deeper

[7] *Alliance for Innovation* (http://transformgov.org/en/home is an international network of progressive governments and partners committed to transforming local government by accelerating the development and dissemination of innovations).

[8] Civic Plus (http://www.civicplus.com), the leading developer of government websites and online community engagement systems.

understanding of people's likes or dislikes in regards to the old website and utilize a number of creative ideas for its improvement. To entice the general public to respond to the survey, the administration made a decision to give away an iPad. According to some study participants, the response rate was very good. The analysis of survey data supplied a number of valuable insights that contributed to the successful completion of the project.

The newly redesigned portal was implemented in summer of 2012. The main objective of that redesign was to move the municipality into the Web 2.0 environment, especially because it could offer a better chance to engage the State College community electronically in a mutually beneficial conversation about issues of importance. At the same time, the new website has become better equipped to keep the community well informed. Interviewed municipal officials summarized their intent behind the portal redesign endeavor: "We wanted to move into Web 2.0 and have a better use of community engagement features within the Internet than we had with the old website." As a result, a variety of Web 2.0 tools including Facebook, Twitter, YouTube, and LinkedIn work together to help achieve the stated objectives for a new municipal portal. In time, Web 2.0-enhanced government portals in a small community could signify a new phase in advancing municipal e-government because of social media potential to foment greater citizen e-participation.

Usage of Social Media in State College

Over a year ago, the State College Borough adopted a bundle of social media tools including Twitter and Facebook, and integrated them into its official website. This fact makes this municipality unique among other small college towns in Pennsylvania investigated within the boundaries of a larger study (Bloomsburg, Edinboro, Kutztown, Lewisburg, and Shippensburg). At the time of the study, integrated Facebook and Twitter municipal accounts were primarily used for the following four major purposes:

1. Emergency notification
2. Citizen participation
3. Public safety
4. Promotion of the official municipal website.

As confirmed by data analysis, social media tools, primarily Facebook and Twitter, were very effective as an emergency notification device. Both Facebook and Twitter played a big role in the newly redesigned portal especially in the situations when local residents should have been swiftly notified of impending emergencies like water breaks, or potentially dangerous weather conditions. During Hurricane Sandy of the 2012 Atlantic hurricane season, the Borough, in addition to the Centre Region Emergency Management Agency, had an extensive notification system occurring through Facebook and Twitter, and those messages were delivered to people's computers, cell phones, and tablets.

In May 2010, before the Borough of State College has actually joined the ranks of so-called "Government 2.0 movement", the municipal administration voiced its intention to "open up government to encourage citizen participation" in one of the early drafts of the municipal *Web 2.0*/*Social Media Policy*. At the time of the study, the Borough leadership firmly supported social media as alternative tools that should be used to encourage greater participation among citizens who may be "not comfortable with coming to a public meeting and speaking in front of an elected body or writing to a council member." During an interview session in March 2013, one of the study participants expressed a widely held view among the Borough staff that social media "are alternative ways of giving a wide sector of population an opportunity to participate." The Borough has recently established an Office of Community Engagement, and the newly redesigned official website with embedded Web 2.0 applications is viewed as "an extension of the community engagement initiative."

Using social media for the purpose of public safety underscores two important factors: immediacy and crowdsourcing. From the public safety perspective, the immediacy factor is critical in the emergency situations (e.g., power blackouts, natural disasters) when time is of the essence and people are entitled to receive up-to-date information at any given moment. Using social media for solving crimes brings forward a potentially significant crowdsourcing factor. People express serious interest in police blotter. One of the study informants made an observation that "more people were signed on to our [State College] Police Department social media page before there was even a post. There are 1400 followers to State College PD when it never posted anything." In comparison, there were 248 likes on the State College Facebook page in the few months of 2013. At the same time, a more traditional yet more time- and resource-consuming way of reaching out to people through an electronic newsletter yields less than impressive results. One of the participants recalled that there were 125 subscribers to the municipal e-newsletter in 2012. Therefore, the outreach potential of social media clearly exceeds the capabilities of more traditional ways of e-government communication techniques.

Promotion of the official municipal website also plays a big role in justifying the need for social media integration and its overall usefulness. As one study participant pointed out: "If we can catch just one new person through our Facebook page vs. our website and draw them back to our website—that's the need."

Figure 3.2 shows the special relationship that exist between various social media tools (Twitter, Facebook and YouTube) and clearly demonstrates how the Borough's Facebook and Twitter pages become interconnected, yet they are both linked to the official municipal website.

Social Media Challenges

Analysis of interview transcripts highlighted some challenges that the State College Borough administrative and IT teams faced in the process of integration of

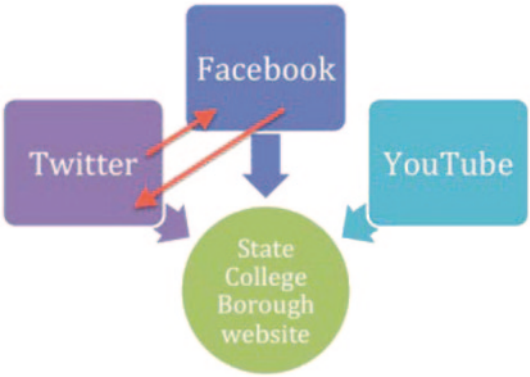

Fig. 3.2 Social media pages connections with the main organizational website

Facebook and Twitter pages into the existing municipal website. The Borough staff identified the following challenging issues set against successful integration of social media into a public organization's website: *time-sensitive content monitoring* and *content management* (inappropriate content, anonymity concerns).

An issue of time-sensitive content monitoring presented a challenge that needed to be addressed before a Facebook page or a Twitter account could become accessible to the general public. Time-sensitive monitoring refers to a municipal policy related to dealing with time sensitive posts on Facebook, which could potentially require an immediate response from the Borough employees. It was challenging because the Facebook page was not monitored 24/7.

Content management has also proven to be a serious challenge. To begin with, there was a need to decide how to deal with anonymous posts submitted electronically. In the context of e-government, anonymity concerns are still open for debate. On one hand, it is common to expect individual accountability and openness when expressing opinions in the public settings. On the other hand, all opinions could be potentially valuable, regardless whether they were expressed anonymously or not. As stipulated by one of the interviewees, a valid opinion posted anonymously is important on the merits of its content not because of the person who offered that opinion.

The problem of finding the right balance in addressing inappropriate language posted on Facebook or Twitter pages integrated into a public website has been identified as another content management challenge. A policy decision aimed at the comments laced with profanity, obscene or vulgar content should have been supportive of the individual constitutional rights yet not offensive to other people. As it turned out, that has not been a big issue because not a single post was removed due to violation of a municipal social media policy. At the end, the Borough administration succeeded in finding acceptable ways to overcome these challenges without limiting citizens' rights to freedom of expression and civic participation. As one of the study participants summarized the policy decision: "We are not trying to control or limit dialog, we want to encourage that dialog even if it's critical of something that we are doing."

Fig. 3.3 The Borough of state college Twitter site in October 2013

Usage of social media in municipal e-government is slowly gaining momentum in small-town Pennsylvania even though State College is the only one in this leading position and has actually adopted this technology shortly before the time of the study. It is important that municipal managers are considering advantages and disadvantages of using social media in the context of e-government.

Social Media Toolbox: Twitter, Facebook, YouTube, and LinkedIn

The State College social media toolbox offers citizens a variety of complementary yet unique ways to stay connected with their municipal government and its various departments. Twitter is one of the social media outlets that are rapidly gaining popularity among local residents (Fig. 3.3).

Following State_CollegePA (https://twitter.com/State_CollegePA) on Twitter provides local residents with NewsFlash alerts about construction updates, holiday parking changes, new parking technology in the Borough, Health Alerts, information about municipal employment opportunities, as well as promotional announcements about other adopted social media tools that can be of general interest (State College Police Twitter site, videos on the YouTube channel about the things to see and do in State College). It stands for a reason that the first tweet, which was posted in March 2012, happened to be an invitation to follow the newly developed State College Police Twitter site (twitter.com/StateCollegePD). It should not come as a big surprise that the State College Police Twitter has gained more popularity with the public within the same period of time (March 2012–October 2013) that the general organizational Twitter site. By October 2013, the State College Police reached 2419 followers, while the Borough still had only 818 followers. However, the Borough

exceeds the Police Department by the number of posted tweets (1020 vs. 168). The researchers examined tweets posted in October 2013. It became evident that tweets posted during that time served a variety of objectives, from addressing current political interests at the local level (e.g., to encourage greater participation in municipal elections 2013) to promoting better governance by seeking public involvement in the organizational decision making. The Borough often purposefully retweeted posts that could have been of interest to different members of the community, and they also included tweets from various government agencies, local businesses, and the Pennsylvania State University.

According the municipal Facebook *Timeline*, State College joined Facebook on May 18, 2010. However, the site remained essentially inactive until 2012. By October 2013, the official government Facebook page had 464 "likes", 24 "talking about this", and 283 "were here." The Borough of State College Facebook page (http://www.facebook.com/BoroughofStateCollege) allows people to give feedback on important community visions, including the online civic engagement initiative called *Engage State College*. It was a Facebook post in November 2012 that announced to the world that the State College Borough, in partnership with Peak Democracy[9], has launched *Engage State College* and invited people to join their first discussion about the Downtown Master Plan that would allow municipal officials to use "wisdom of the crowds" in their decision-making processes.

The official Facebook home page (Fig. 3.4) offers a clear interpretation of the Borough's priorities in opening up new channels of two-way communication between the government and the community it serves. It is about finding the new cost-efficient ways to improve the delivery of services (*Citizen Request Tracker*) and encourage greater citizen engagement in the municipal decision making process (*Engage State College*). The Citizen Request Tracker app is a specialized Internet-based citizen request management (CRM) tool that allows municipal employees to gather plentiful information within a local community about various everyday issues and concerns (e.g., potholes, fallen trees) without creating any additional demands on their time or shrinking municipal budget. By utilizing the *Citizen Request Tracker* app on Facebook, residents of the Borough have become actively engaged in reporting and fixing problems within their own community that could have otherwise gone unnoticed for a while. These requests are routinely forwarded to the appropriate municipal department, and concerned citizens are later notified about any changes made to their requests (assigned, scheduled, or completed).

The State College YouTube channel[10] streams videos of community events and open houses, thus allowing people to become fully aware of the wide scope of various municipal problems. It also gives local population a chance to get involved, to share and embed visual information. As a bonus, this channel provides access to videos that were reported in the news and/or featured by local TV stations, FOX 8

[9] Peak Democracy (http://www.peakdemocracy.com) develops Internet software that augments and diversifies online civic engagement in ways that can increase public trust in government.

[10] State College YouTube channel, http://www.youtube.com/StateCollegeBorough.

Fig. 3.4 The Borough of State College Facebook page in October 2013

WWCP in particular. In November 2013, such featured news video[11] was about the *State College Crime Map* that enabled people to track reported crimes with a click of a mouse on the State College Police web page.[12] At the same time, the channel offered a selection of playlists of community videos about things to do, ways to get around or park in the downtown State College, in addition to places to see in the vicinity. In the few weeks after October 16, 2013, the most popular video (125,077 views) on the State College YouTube channel was about a new Zipcar car-sharing program offered by the Borough in partnership with the world's leading car sharing network. This program rendered an affordable alternative for car ownership for students over the age of 18, faculty, and members of the local community ages 21 and over.

Following the State College Borough on LinkedIn is yet another way for citizens to make connections with municipal employees (http://www.linkedin.com/company/borough-of-state-college) and learn more about an array of existing products and services.

Social Media Policy

The Borough of State College has first drafted a social media policy in May 2010 as a document for internal use only. It was a concurrent administrative decision to join Facebook that prompted drafting a policy. As stated in the document, the

[11] State College Crime Map, http://youtu.be/hEyQ9FnIylI.

[12] State College Police Crime Reports, http://www.statecollegepa.us/index.aspx?nid=27.

use of social media should have met several policy objectives: (1) two-way communication of ideas and information, (2) a chance for municipal government to "monitor and respond to hot topics and emerging issues quickly", and (3) "open up government to encourage citizen participation." The document had to serve a dual purpose of informing municipal employees and officials about their additional responsibilities in the Web 2.0 environment and setting specific guidelines for all users, including the general public. According to this draft, the Borough Manager was responsible for "arbitrating and resolving issues and problems pertaining to the Web 2.0/social media policy." It also stated that the moderator(s) selected within the organization based on their "appropriate content/technical experience" and approved by the Manager would administer all official municipal social media sites. The major requirement for any social media site established by the policy draft was to provide a link back to the Borough of State College main webpage (https://www.statecollegepa.us).

At present, the social media policy is openly available on the website (http://www.statecollegepa.us/documentcenter/view/2473) and on the Facebook page. It clearly states that all municipal government social media outlets in use (e.g., Facebook pages, Twitter feed, YouTube channel) represent a moderated online discussion, and the Borough reserves the right to remove any comment that does not comply with the posted guidelines. The following nine categories of improper content have been identified in the policy:

1. Profane language
2. Content that promotes, fosters, or perpetuates any kind of discrimination
3. Solicitations of commerce
4. Confidential information of any kind
5. Comments supporting or opposing political campaigns and/or ballot questions
6. Links to or posts containing sexual or pornographic content
7. Information that may compromise the safety and security of the public or public systems
8. Content that may lead to encouragement of illegal activity
9. Content that violates a legal ownership interest of any other party

Unlike some other municipalities in Pennsylvania (e.g., Edinboro in Erie County, Shippensburg in the Cumberland Valley) that are still favoring more traditional ways of electronic communication with their constituents such email interaction, the State College administration has chosen to adopt the emergent e-communication paradigm. State College is a college town where 75% of residents are students, and a purely functional website did not attract attention of this younger crowd. Moreover, by utilizing primarily traditional ways of communicating, the democratic procedures cannot include everyone who wants to be included. State College study participants strongly suggested that the alternative ways of communication like the ability to view council meetings online or leaving comments online give a wide sector of population an opportunity to participate.

The cornerstone of the Borough's stated approach to usage of social media in e-government is to treat each medium as an alternative not a replacement of any

standard communication tool such as email. The role of social media in e-government environment is to enhance and complement traditional ways local government communicates with its constituents.

What's Next?

At the time of the study, the Borough of State College maintained only one active Facebook site for all municipal operations. However, the Borough administration remained open to the idea of creating departmental Facebook sites, particularly for the State College Police and the Public Works Department. The purpose of such additional Facebook pages would be meeting the specific needs of these departments. Moreover, the departmental Facebook sites are intended to become efficient and time-saving tools. While the Police Department Facebook page could be used to gather useful information for solving crimes in State College, allowing local residents to report street surface potholes and other dangerous conditions on the streets of the Borough in real time may help improve performance of the Public Works Department.

3.6 Conclusion

The long-standing e-government barriers such as staff shortages, budgetary constraints and lack of advanced technical skills that were previously identified and widely discussed in the literature are still challenging enough to slow down adoption of new Web 2.0 technologies in small municipalities. However, this research grounded in empirical data demonstrates that these barriers can be compounded by some further social media adoption concerns and a mix of obstacles associated with technology implementation. Those additional difficulties arise from a number of policy considerations related to social media content management and the need to monitor and moderate the two-way communication of ideas and information.

As described earlier in this chapter, State College went through a number of conceptual and implementation challenges during the Web redesign project of 2011, which had been focused on integration of social media tools into the official municipal portal. This research indicates that the struggles and challenges that the Borough of State College experienced in 2011 might be part of a natural phase in e-government development in small municipalities. These impediments are often superficial and can be overcome in time.

In this case study, e-government is approached as a sociotechnical, dynamic system situated within a complex context (people, technology, and location). Sociotechnical theory dictates that successful implementation of a dynamic e-government system requires simultaneous configuration of all the major systemic components (technology, organization and society). For small municipalities with

limited staff who may have inadequate technological expertise and deliver public services under tight financial constraints, approaching the dilemma of moving toward Web 2.0-enhanced e-government from the sociotechnical theory perspective should be beneficial.

Current research indicates that a number of factors lead to successful implementation of Web 2.0-enhanced e-government in small municipalities:

1. Strong leadership and managerial innovativeness
2. Input from staff and end users (citizens) during the portal redesign process
3. Collaboration between different departments within the public organization
4. Citizen engagement in e-government implementation and the everyday concerns of the community

Web 2.0-enhanced e-government functionalities and the experiences described in this case study such as geo-tags for improving location-based communication between citizens and local government are indeed becoming municipal government reality. The Borough has recently offered their residents a new tool, the Citizens Request Tracker that can be used to report their concerns (e.g., potholes, missing street signs, fallen streets, graffiti) to town authorities. With geo-tagging and photo taking, this application makes it easy for people to submit work requests and for a local government to significantly improve its response time and efficiency. People can now choose to connect with the State College Borough on Facebook, and Facebook like/comment/share feature allows them to let their opinions and concerns on a variety of topics known, from public safety during snow emergencies to the Borough's parking services and a new neighborhood plan.

In the post-implementation phase, it is hardly possible to overlook an importance of developing a Web 2.0 municipal policy that will safeguard consistent and efficient use of social media tools throughout the entire organization and help it deal effectively with inevitable challenges associated with using such technology (e.g., dealing with inappropriate content). The study findings also point toward another potential success factor in utilizing social media in a municipal government setting. This factor is timely selection of a moderator within a public organization. Such moderator(s) should have an appropriate content and technical expertise and, consequently, they would be able to administer all official municipal social media sites.

At the end, if a local community does not move forward, it will surely be left behind.

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