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Abstract

This study examines the collective use of the electronic information and communication channels and their impact on citizen participation for public discourse. Using both quantitative and qualitative research methods, we investigate public communication channels available for government service provision in a large metropolis in China. Specifically, four electronic communication channels are analyzed to assess the impacts of diverse dimensions for electronic participation from citizens to governmental discourse. Upon completion, the study will provide a useful framework with insights for both researchers and practitioners in the power of electronic information and communication channels in electronic participation in the public discourse.

Keywords

e-government, e-participation, information channel, communication channel

Introduction

Emerging from the late 1990s, electronic government (e-government) has become an increasingly important topic (Gronlund and Horan, 2004). The advance of information and communication technology enables government agencies to easily move towards electronic government (e-government). Electronic government can be defined as usage of the information communication technology and networks to enable government service, make information accessible to the citizens, as well as enhance the interactions between the government and the citizens (Teo et al. 2008). Most e-government stage models (e.g. Layne and Lee, 2001; Yao and Ives, 2002) argue that the development of e-government usually evolves from online information posting, online services and transactions, and finally towards a horizontal portal for citizens. Most counties are currently in the last stage of e-government development. Two-way electronic communications between government and citizens are an essential development in this stage. The United Kingdom central government, for example, representing one of the leading e-governments in the world, is projected to spend £4.2 billion in 2010/2011 on e-government projects (Irani, Love and Montazemi, 2007). Many projects are dedicated to creating the electronic channels and increasing the awareness of civic participation in government affairs (Jansen, Dowe and Heimann, 2007). For instance, "Writetothem.com" and "hearfromyourmp.com" are developed for the citizens to communicate with the government officials (Commission of the European Communities, 2006).

The British Council (2006) defines electronic participation (e-participation) as "an offering that enables private users to contribute opinions and suggestions to a (semi-) public political opinion-making process, using the Internet for purposes of information communicator, or participation". In this article, we define electronic participation (e-participation) as the citizen's communications with the government and involvement in the government's policy making process through

electronic channels. The goal of e-participation is to promote a fair and efficient society, using technology to increase access and availability of government services and information to citizens (Sæbø, Rose and Flak, 2008). E-participation and e-voting are considered to be the two major components of e-democracy (Jansen, et al., 2007). Technology enabled e-participation provides citizens with an outlet to express their opinions and promote their own interests, helping to achieve the proper balance between bureaucracy and autonomy (Wang, 2005). Based on the assessment of the US government, the Internet has been identified as a key component in re-engineering the government-citizen relationship (Chadwick and May, 2001). Thus, citizens' involvement in e-participation is an important task component of e-government development.

Many electronic channels have been developed for citizens' participation, such as Mayor's online chatting; online government-supported forums; and government mailbox and e-petitioning. The contents of the communication vary depending on the communication channels (Macintosh, 2004) and the features of the different channels also impact citizen participation in various capacities. So far limited studies have focused on e-participation channels (Sæbø et al., 2008). This study aims to fill this gap to examine various e-participation channels and explore ways to improve the communication quality between citizens and governments.

Ranked as one of the top 12 counties in the promotion of e-participation activities by United Nation, China has been actively developing its government-citizen communication channels. The government is actively developing channels for the citizens to express their dissents, complaints and concerns, and participate in the policy making processes (Wang, 2005). Particularly, Shanghai, one of the most developed metropolises in China, takes great efforts in the e-participation promotion. In this study, we examine the features of different e-participation channels developed by the Shanghai local government and assess the impact of the channels on citizen e-participation.

In the following sections, a brief literature review will be discussed followed by research framework development. We will also discuss the study methodology, preliminary results, and the further research plan.

Literature Review

Although the development of e-government started just two decades ago, studies have examined various topics, including the e-government definition and its comparison with electronic commerce (e.g. Barzilai-Nahon and Scholl, 2007; Gronlund and Horan, 2007), e-government development practices in different states and countries (e.g. Holliday and Yep, 2005; Teo, 2008; West, 2004), e-government application service and website design (e.g. Huang, 2007; Kokkinaki, Mylonas, Thrassou, Economon, Kountouris and Panayiotou, 2008; Olphert and Damodaran, 2008), the factors impacting the adoption of e-government (e.g. Carter and Belanger, 2004) and social changes brought by the e-government (e.g. Moon, 2002).

Studies on e-participation have so far been limited, though progress is being made. Olphert and Damodaran (2007) investigated citizen engagement in the current e-government development in the UK local government. They present the benefits of engaging citizens and provide a set of suggestions on how to enhance the participation. Lourenco and Costa (2006) studied how to develop an e-participation system to involve the citizens' opinion in local government decision. Grimsley and Meehan (2007) proposed a framework to evaluate the electronic government transaction system. By using a housing assignment project, they emphasize the use of intangible outcomes to measure the project success in addition to the tangible outcomes. Intangible outcomes include community cohesion, well-being, sustainability and trust. Jansen, et al. (2007) also compared the current e-participation development in UK and Germany and listed all the ongoing projects.

There also has been only a small focus on the electronic participation channels choices. Reddick (2005) examined citizen interactions with e-Government from the citizen's perspective. He found that informational e-citizens are more prevalent than transaction-based e-citizens; and wealthy persons tend to use e-government more. Thomas and Streib (2003) found that the type of task as well as the personal characteristics of citizen may be determinants of channel choice. Reddick (2005) confirmed task and channel characteristics to be of importance. Pieterson and van Dijk (2009) found that electronic channel choices also depend on task, channel, personal, and situational factors, such as the time available, the distance towards the channel and people's communication habits. Teerling and Pieterson (2010) conducted further experiments to promote the electronic channels by sending personalized letters to citizens. Sæbø et al. (2008) conducted a literature review and summarized the previous studies from e-participation actor, continual factors, effect, evaluation, e-participation theory and research methods.

However, most of these studies do not specifically focus on evaluation of electronic communication channels. Only Ong and Wang (2009) conducted a longitudinal case study on Taipei City Mayor's Mailbox and identified several important factors on the e-participation, such as responding citizens' dissatisfaction, continuous involvement of Mayor and commissioners, and engaging street level bureaucrats. Based on the comprehensive literature review on e-participation, Sæbø et al. (2008) call for the development of evaluation criteria on e-participation activities. Thus, it is very necessary to conduct a study to systematically evaluate the electronic communication channels in e-participation and its impact on democracy.

van der Duin and Huijboom (2008) have proposed that e-government websites and services can be evaluated from technological, political, institutional and social perspectives. Thus, in this study, we adopt this four- perspective framework to assess the features of e-participation communication channels.

Framework Development

There are different ways to enable G2C communications, such as Mayor online chatting, Governmental forum, Governmental Mailboxes and e-Petitioning. We develop the following framework to study the features of e-participation communication channels from the citizen's perspective (Figure 1).

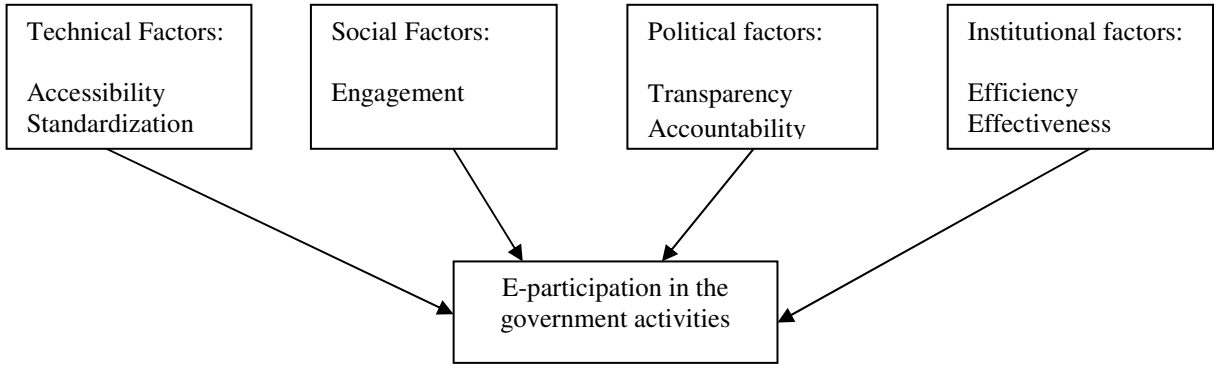

Figure 1: E-Participation Channel Evaluation Framework

Technical perspective examines the citizen's technology readiness to use the different e-participation channels. Accessibility and standardization are the two important factors from this perspective (van der Duin and Huijboom, 2008).

Accessibility refers to the extent to which particular electronic communication channel and associated information can be easily accessed by the citizens. Digital divide is a significant concern to the government when the online services are offered (Carter and Belanger, 2004). The digital communication channels should be widely available for the citizens to use. Accessibility includes information accessibility and technology accessibility.

Standardization refers to the extent to which software and hardware are standardized to enable the access to the e-participation channel (van der Duin and Huijboom, 2008). Citizens should be able to use commonly-available software, e.g. common email software and web browsers, to access the online services freely. Too complicated technology will discourage the participation.

Social perspective examines the extent to which the online communication channels can help to generate the social engagement for the citizens to participate in governmental activities. **Engagement** here refers to the willingness of the citizens to use online communication channels (Reddick, 2005). It is reported that citizen-initiated communication channel better facilitates citizen participation than do government initiated web services (Ong and Wang, 2009). Citizens are more willing to participate in the activities if the topics are associated with their interest (Olphert and Damodaran, 2007).

Political perspective examines the factors impacting the e-democracy or the government administrations (Hartford, 2005). The important factors from this perspective are transparency and accountability.

Transparency refers to the openness of the government operations particularly after the government receives the messages through online communication channels. It is considered as one of the major features associated with e-democracy (Yildiz, 2007). Open communications and clear indication on the possible feedback can gain citizens' trust on the communication channels and lead to higher participation in the governmental activities (Ong and Wang, 2009).

Accountability refers to the extent to which the citizens can believe that their opinions can be well taken; or their complaints can be responded (van der Duin and Huijboom, 2008). Accountable online communication channel can ensure the timely feedback (Olphert and Damodaran, 2007). Quick feedback can help the citizens to increase the trust on the government (Pieterson and van Dijk, 2007). Grimsley and Meehan (2007) argue that intangible outcomes of interaction, which refers to a satisfaction, trust, well-informed, and self-control process, are major reasons to promote citizens' participation.

Institutional perspective is also used to examine efficiency and effectiveness of the online communications channels. **Efficiency** of online communication channels refers to the convenience brought by using the channel, including time-saving and cost saving. It is ranked as one of the major goals to achieve public value (Moore, 1995). Using online channels, citizens do not need to leave the work and make a special trip to talk with the government agencies.

Effectiveness refers to the extent to which citizens feel that their message has been transferred and understood clearly by government officials. E-participation channel needs to transfer the online information into offline information accurately to the right person/department. It is also listed as one of the major features of G2C communications (Yildiz, 2007).

All these factors associated with the communication channels will lead to the different level of citizens' participation.

Research Methodology and Preliminary Results

Study context

In this study, we choose the local government of Shanghai to assess the features of the existing online communication channels.

The development of e-government in China has emerged since "Golden Bridge Project" in 1990s, where the government starts to invest in the information technology and adopt the system for the government usage (Wang, 2005). In the past decades, Chinese government has moved quickly towards e-government. For example, -"three networks and one database" have been set up, including the government business network, the primary minister and provincial government connection resource network, the Internet-based public information network, and the governmental information sharing database.

In the most recent report by the United Nation (2008), China is listed as one of the leading countries in promoting and developing electronic decision making systems and applications. Particularly, Shanghai is the leading city in promoting e-government development in China. Multiple e-participation projects have already been carried out. It is also reported that the Internet usage in big cities in China has reached 60% (CNNIC, 2009). In Shanghai, the economic and financial capital in China, the citizens have high technology literature. They are more likely to use online communication channels. Therefore, it is suitable to study e-participation in the Shanghai local government.

Online G2C communication channels

Currently, there are four G2C electronic channels implemented in the local government at Shanghai: "Mayor online", "Citizen's suggestion collection", "Government mailbox" and "E-petitioning".

Mayor online

The mayor of the city appears on an online chat room supported by the government website -to communicate with the citizens. The head of the topic-related government department may also show up. Communication occurs once every other month. The specific time and topics are decided by the mayor or the associated officials. The topic and meeting time are announced one week before the online chatting.

Online suggestion collection

When the government needs to ask citizens' suggestion for a certain decision, the government agent posts a specific question online and asks the citizens to submit their opinions via the website within a specific time frame. For example, before the government makes any changes on the bus routes and -schedules, it asks the citizens to provide suggestions for possible adjustments.

Government mailbox

The citizens will directly send the suggestions, inquiries or complaints to various departments through emails. The emails can be anonymous. In 2008, the city of Jiading received 3134 cases by this channel Most emails discussed the issues on transportation, safety, public buses services, labor protection, school management, property management, teacher's benefits, school enrollment and healthcare services.

E-petitioning

Citizens report their complaints or problems to the Petition Office directly via the website-enabled email systems. Before submitting the petition, the citizen should create the account using their real name, ID number and contact information. Most cases reported in this channel are urgent and tightly related with the citizen's benefits. The common issues discussed through this channel are on transportation, school, and safety.

Research plan

We plan to employ both qualitative and quantitative research methods in this study. In the first stage, we are collecting the documents on the communication channel usage during the past 2 years. These documents include the meeting memos of Mayor online, summary reports for each suggestion collection activity, citizens' emails through government mailbox and e-petitioning, government responses of each case and government annual reports on e-participation. These

documents record the citizens' participation situation. We also conduct semi-structured and open-ended interviews with both government officials and citizens. Because the issue of participation can be sensitive to both the government and the citizens, we offer the open-ended interviews to get a broader spectrum of information. The interviewed government officials include the officials dealing with the questions, the officials managing the Government mailbox and E-petition mail, and the IT professionals maintaining the government websites. These interviews and documents can help to provide further perspective on managerial and technical decisions helping to elucidate the features and impact of the online participation channels.

In the second stage, we plan to further clarify and refine these dimensions of the e-participation channels based on an extended literature review and interview results. We will develop measurement scales for the questionnaire and conduct a survey to assess the e-participation channel from both government and citizen perspectives.

Preliminary results

Currently, the interviews and document collection are in progress. Based on the initial interviews with some participating citizens and the local government officials, and examination of collected documents, we have summarized the features of the four communication channels along the seven factors (Table 1).

	Mayor online	Online Suggestion Collection	Government Mailbox	E-Petitioning
Accessibility	Low	Low	High	High
Standardization	Low	Relatively high	Relatively high	Relatively high
Engagement	Low—High	Low-- High	High	Relatively high
Transparency	High	High	Low	Low
Accountability	High	High	Relatively Low	Low
Efficiency	Low	High	High	High
Effectiveness	Relatively high	Relatively high	Low	Low

Table 1: Features of Communication Channels

1) Mayor online

Since the time and topic of online discussion are decided by the government, citizens may not be able to access to the channel at that specific time. Some companies also restrict the access to the online chat room during business hours. Accessibility, therefore, is relatively low. Furthermore, because the citizens have to use the chat-room supported by the government website, technology standardization is also low.

Engagement depends on the topic and the mayor's attitude toward this communications. When a topic attracts the interest of both citizens and the mayor, the major pays attention to this topic and engagement is high. However, the topic cannot be freely chosen by citizens, which limits the engagement of citizens. In this channel, since the mayor can answer the questions immediately or assign the responsible officials to provide the response, the citizen can get the response or at least know who to contact. The accountability is high. The relative transparency inherent in a live chat does provide citizens timely and personalized feedbacks. For example, in the most recent "Mayor online" session, the discussion was on traffic and transportation. Approximately 118 citizens asked questions.108 questions were immediately answered and the remaining ten received responses from the head of transportation bureau after the online meeting. Furthermore, following the online meeting, solutions provided by the Mayor were actually implemented by the local police and transportation agencies.

In addition, due to the time restriction for communication, we found that efficiency can be relatively low. Under the right circumstances, however, online discussion does allow citizens to vocalize their concerns directly to high-ranking officials and thus effectiveness in high. For example, a citizen who participated in the "Mayor Online" reported:

> *"In the south station bus station, the transportation is very messy. Many cars park there without permission and many retail booths set there without permission as well. Taxi also blocked the whole street to wait for the passengers."*
>
> To which the mayor replied:
>
> *"Based on the transportation rule published by China, the transportation policeman should monitor all parking frequently and tow the cars away. The police office in that particular area will put more efforts to increase the policemen showing-up frequency and manage the parking tightly. Taxi should not occupy the street to park."*

Actions were taken by the transportation department in response to this discourse and transportation management was enhanced.

2) Online suggestion collection

By using the Internet or the website as the main platform for discussion, citizens can express their opinions relatively easily. Most Shanghai local government websites are supported by the popular web browsers, including internet explorer, Firefox and Safari. Thus technology standardization is high.

Similar to the Mayor online, the topics for suggestion collections are based on the needs of the government. Given a relevant topic, such as relocation of residential areas for the development of supermarket, citizens are enthusiastic and online participation is high. Generally, during the suggestion collection period, citizens can access opinions posted by others before submitting their own, and the final decision of the government is posted on the website, creating a fairly transparent portal for citizen-government communication. This channel is usually used for a timely topic with a certain time frame. The specific government bureau is responsible for the suggestion collection and final results report. Thus the accountability is high.

Since the opinion collection occurs within a short period of time, the responsible bureau can provide the final results quickly. It is an efficient process. Also, since the citizen can check other suggestions to clarify their understanding and modify their questions, the effectiveness is relatively high. In most cases, the citizens' suggestions have been well taken. The following is an example of e-participation in this channel.

> *On Dec. 22, 2008, transportation bureau of Jiading City asked for the citizens' opinion on public transportation schedule and routes changes. Within 40 days, about 492 suggestions had been collected and reported to the transportation bureau. The transportation bureau analyzed them and adopted 381 suggestions. For example, one adopted suggestion is that "No. 5 bus should go through XX road --- YY road --- ZZ road and stop at ZX road. In this way, the NanYuan middle school students and teachers can easily catch the bus."*

3) Government mailbox

Email is used as a major mechanism for this channel. The email technology has been standardized and is easily accessible for the most Internet users.

Citizens can seek information, send inquires, and submit their complaints via emails. Because there is no explicit restriction on topics, citizen engagement is high. However, although email may be sent to specific government bureaus, it is not clear to the citizens how their emails are handled. Citizens have no control over who will read the emails and when the feedback will be provided. Hence, although this channel is the earliest employed for e-participation, the transparency and effectiveness cannot be easily measured or achieved.

Government mailbox, to some extent, still provides a means to facilitating citizen input. Citizens gain convenience and efficiency by emailing government officials. In some cases, however, emails may be misunderstood. Due to the mass volume of emails received by the government, clarification and further processing could be delayed.

In 2008, the city of Jiading received 3134 cases by this channel. 99.4% of which have been resolved. Among the 3134 cases, 1360 were complaints, and 339 of those complaints were associated with transportation bureau while 312 were reported to the police department. The number of cases also varied according to different bureau and local government agencies. Among the 49 bureaus and local governments, 45 have given response to all the received email while the remainders left some emails (about 10%) unanswered due to complications.

4) Online petition

Similar to government mailbox, online petition uses email as a major G2C communication mechanism. Technology standardization and accessibility is high considering the high penetration of Internet users among Shanghai populations.

Unlike government mailbox, these petitions sent via emails are handled by a specific department, the petition office. This office will review the email and then forward the emails to the corresponding government agency. As this is the only

channel through which the citizens can submit urgent and complicated questions, engagement is still relatively high. Citizens, however, are not informed on the process or response time, and thus, transparency is low.

The response time can also be delayed due to the large volume of emails and complication of the cases. Efficiency is questionable. It is also reported that many bureaus tend to provide the explanations rather than solutions (Hartford, 2005). We have the same findings in this study. Since some cases are complicated which may need collaboration of different agencies, some questions cannot be solved. For example, in 2009, a citizen reported some issues associated with river remediation project in XX industrial zone. That project had lasted for almost three years, but was left unfinished. He asked the government to continue and finish this project. The river remediation office replied to his inquiry, telling him that the project was almost finished. Most of the unfinished work was due to the relocation of the old industrial zone. The situation was reported to a higher level government for further coordination but no tangible solution was provided. Thus, due to the lack of collaborations among government agencies, the accountability of this channel is low.

Through this channel, since no specific timeline for project can be given and the citizens do not have the chance to clarify their issues, in many cases, their cases might be misunderstood and their problems cannot be solved. The effectiveness of this communication channel is relatively low.

Conclusions and Future Research

In this study, we develop an evaluation framework to analyze the features of different communication channels along technological, social, institutional and political perspectives, and study its impact on the e-participation. To the best of our knowledge, this study is one of the few attempts. The findings of this study can possibly provide the government some insights on the current communication channels and improve the communication quality between citizens and government. We also presented here our preliminary results.

We plan to clarify the conceptual lens further as we move to analyze more data and further literature reviews. We will further the understanding of information and communication channels, advancing current research on the subject through the use of cases study and survey. Beyond the current study of the citizens' perspective, we intend to include the government perspective and the interactions between the two parties in order to better understand and improve the e-participation.

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