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Social media in Chinese government: Drivers, challenges and capabilities

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ABSTRACT

By the end of 2012, Chinese microblogging accounts had reached 309 million. Among them, over 176,000 accounts were opened and managed by Chinese government agencies, as new channels to disclose government information provide public services and interact with citizens. This study investigates the external drivers and challenges that Chinese government agencies are faced with and the internal capabilities of Chinese government agencies in using social media. The study further discusses the relationship and dynamics between the external environment and internal capabilities of Chinese government agencies in using social media. Based on the findings, the paper provides some recommendations to government agencies in China and other countries faced with similar challenges.

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1. Introduction

Since 2009, China has witnessed a boom in social media, especially microblogging. By the end of December 2012, the total number of Chinese microblogging users had reached 309 million, representing a growth rate of 23.5% over the end of 2011. Consequently, the fashion of receiving and disseminating information in society has been dramatically transformed.

Microblogging is a broadcast medium in the form of blogging. It differs from traditional blog in its content that is typically smaller in both actual and aggregate file sizes. It “allows users to exchange small elements of content such as short sentences, individual images, or video links” (Wikipedia, 2013). Some popular microblogging services include Twitter, Tumblr, FriendFeed, Plurk etc.

However, foreign microblogging services like Twitter and Plurk are blocked in China. Instead, Chinese microblogging users use Weibo, which is the Chinese word for “microblogging”. Weibo services are like hybrids of Twitter and Facebook and use a format similar to twitter with key difference in that it is used almost exclusively by Chinese language speakers (Wikipedia, 2013). The two most popular Weibo services in China are Sina Weibo, launched by SINA Corporation in August 2009 and Tencent Weibo launched by Tencent in April, 2010.

The pervasiveness of microblogging among citizens and business in China has also urged government agencies to launch government microblogs to disclose government information, provide public services and foster interactions between government and citizens. Since 2010, thousands of government microblogging accounts have been opened by Chinese government agencies. According to the Chinese Government Microblogging Assessment Report (China National Academy of Governance, 2011), the total number of Chinese government microblogging accounts has exceeded 176 thousand by the end of 2012.

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What factors have driven Chinese government agencies to use microblogging? What kind of challenges are they faced with? Are they capable of using this new tool to interact with citizens? This study investigates the external drivers and challenges that Chinese government agencies are faced with and the internal capabilities of Chinese government agencies in using social media. The study further discusses the relationship and dynamics between the external environment and internal capabilities of Chinese government agencies in using social media. Based on the findings, the paper also makes some policy recommendations to government agencies in China and other countries facing similar challenges.

2. Literature review

A number of studies have investigated the challenges, issues and problems around government use of social media. The Center for Technology in Government (2009) identifies the issues, concerns, and challenges that government agencies are faced with in social media use. These issues and concerns include resources, legal and regulatory ramifications, governance, making a business case, security, accessibility, perception, and information overload. Human Capital Institute (2010) investigates the critical barriers to the implementation and expansion of the social networking tools in government. Security restrictions are found to be the major barrier to the future use of social networking tools, followed by higher priorities take precedence, difficulty in building a compelling business case for them, lack of support from senior leadership, lack of expertise in selecting and implementing them, budgetary, and user adoption.

With a particular emphasis on e-participation, Staiou and Gouscos (2010) identify the factors that underlie an attempt to “socialize” citizen participation and governance in a Web 2.0-like fashion, and provide a synthesis of key recommendations for e-participation projects along three groups, contextual recommendations, process design

recommendations, and process implementation recommendations. The authors further conclude that most critical factors and barriers are not directly related to the technology chosen, but are more determined by the context in which such projects are inscribed as well as the processes chosen. Moreover, Bryer (2011) identifies multiple filters that can shape the design and implementation of social media and networking technologies for public participation, they are administrative culture, organizational culture, formal institution and political intelligence, which address both the internal and external environment of government agencies.

John C. Bertot, Jaeger, and Grimes (2010) assert that the use of social media can create both new opportunities and new challenges. On one hand, the combination of e-government, social media, Web-enabled technologies, mobile technologies, transparency policy initiatives, and citizen desire for open and transparent government is fomenting a new age of opportunity. On the other hand, challenges also exist, but they are less technological. Instead, the technology access and literacy and the need for users to be able to understand and use the technologies are the real barriers. The authors further conclude that transparent and open government points to two critical success factors: one is the culture of transparency embedded within the governance system, and the other is a transparency “readiness” such as technology penetration, technology capabilities and access of government agencies, and social and technology readiness of the populace. J. C. Bertot, Jaeger, and Hansen (2012) further examine the existing regulatory framework and the ways in which it applies to social media use by the U.S. federal government, highlighting opportunities and challenges agencies face in implementing them. The authors present three key information policy objectives related to government use of social media: 1) access and social inclusion; 2) privacy, security, accuracy and archiving; 3) governing and governance. Kavanaugh et al. (2012) present findings from a pilot study conducted between June and December 2010 with government officials in Virginia and the greater National Capitol Region to understand the use of social media by government officials as well as community organizations, businesses and the public. The authors identify a number of factors related to social media use by government including communication, information, technology, policy, legal issues, costs and training. Picazo-Vela, Gutierrez-Martinez, and Luna-Reyes (2012) present the perceptions of risks, benefits and strategic guidelines about social media applications gathered from 250 public servants from Central Mexico. The risks identified by the research are organized into six categories, which are general context, institutional framework, interorganizational collaboration and networks, organizational structure and processes, information and data, and technology.

Some Chinese institutions have also investigated the statistics, trends and recent facts of microblogging in China. According to the 31st Statistical Report on Internet Development in China By the end of December 2012, the total number of Chinese microblogging users had reached 309 million, representing a growth rate of 23.5% over the end of 2011. Altogether 54.7% of the internet users use microblogging in China. Since 2011, microblogging has become a mainstream internet application in China and its vast number of users made it a communication center of public opinions. General public users, opinion leaders and traditional media have turned to microblogging increasingly as a way to receive news, publish news and express opinions. It is also worth mentioning that, by the end of 2012, 202 million Chinese microbloggers use mobile devices to access microblogging services, accounting for 65.6% of Chinese microblogging users, and this tendency makes microblogging one of the most potential mobile internet applications (China Internet Network Information Center, 2013).

Meanwhile, 176,714 government microblogging accounts have been launched by various government agencies in China by December 2012, increasing by 249.51% over the end of 2011. Among them, a majority of government microblogging accounts are run by county-level agencies at 43% followed by city-level agencies at 33%. In terms of government functions, 37% of government microblogging accounts are launched by

policy departments, followed by Communist party committees at 12% and propaganda and publicity departments at 11% (China National Academy of Governance, 2011).

A number of Chinese scholars have further investigated the problems, issues, and factors with regard to Chinese government use of microblogging. Li, Zhou, and Yang (2010) identify some key problems with government microblogging such as the selective listening and response, the “show” effect, the immaturity of internet users, as well as the mismatch between users' expectations and actual effects. Cui (2011) asserts that Chinese government microblogging was in a state of disorder, lacking necessary operating mechanisms, relevant laws and regulations and marketing measures. Liu, Zhang, and Yue (2011) suggest that the collaboration between government websites and government microblogging, as well as relevant regulations and institutions, are critical. Qu (2011) recognizes a couple of risks for operating government microblogging, such as treats to confidentiality, opinion disorder, verbal aggression and fragmented information. Han (2012) points out a couple of barriers for managing Chinese government microblogging including weak marketing, low interactions and lack of unified guidelines. Deng (2011) emphasizes a number of challenges in managing government microblogs. They are fragmented communication with regard to accuracy and authority, treats of open information to confidentiality, and the disturbance of emotional expressions to the judgment of public opinions.

Zheng and Ren (2012) find a number of issues and problems in Chinese government microblogging such as inconsistent identity, irrelevant information, rigid and inconsistent language styles, low frequency of information updates, short active period, and lack of cross-boundary collaboration. Zheng (2012) indicates that the transparency and interaction in Chinese government microblogging still remain a low level, the content and information are mainly concern with the government itself rather than the public, and the language styles are monotonic and rigid.

The factors and issues related to government use of social media are summarized in Table 1. These factors and issues can be categorized into five dimensions: 1) social and economic; 2) political, legal and policy; 3) organizational and managerial; 4) information-related; and 5) technological. It seems that a majority of factors and issues fall into the organizational and managerial category which is related to the capabilities in government, and others fall into the social and economic dimensions as well as political, legal and policy dimensions. Only a small number of issues are subject to information and technology.

Although international literature has identified a number of challenges and issues associated with government use of social media, most findings did not clearly differentiate the external challenges and internal capabilities of government. Furthermore, these findings may not be generalizable to China, given its specific political, social, economic and cultural contexts. Although studies in China have also found a number of factors but mostly from the perspectives of journalism and communication disciplines, while only a few studies take a public administrative perspective. Besides, many studies were not conducted with systematic and empirical methods. Therefore, this study attempts to fill up this gap with empirical methods by examining the external drivers and challenges that Chinese government agencies are faced with in using social media and exploring the internal capabilities of Chinese government agencies to use social media.

3. Research methods

The study took a qualitative and inductive approach to study the drivers, challenges and capabilities of the Chinese government in use of microblogging. Specifically, the research questions are as follows. First, what particular external drivers and challenges are Chinese government agencies faced with in using microblogging? Second, are Chinese government agencies capable of taking advantage of microblogging? Third, what is the relationship and dynamics between

Table 1
Issues, challenges and problems.

Studies	Research focus	Purposes of using social media	Dimensions				
			Social and economic	Political, legal and policy	Organizational and managerial	Information-related	Technological
Center for Technology in Government (2009)	Social media in general	General purposes	Accessibility	Legal and regulatory ramifications, political risks	Resources, governance, making a business case, perception	Security, information overload	Fast pace of change in environment
Human Capital Institute (2010)	Social media in general	General purposes	User adoption	Higher priorities take precedence	Difficulty in building a compelling business case, lack of support from leadership, lack of expertise, budgetary	Security restrictions	
Staiou and Gouscos (2010)	Social media in general	Participatory e-governance	Contextual factors	Contextual factors	Process design, and process implementation		
Bryer (2011)	Social media in general	Public participation		Formal institution and political intelligence	Administrative culture, organizational culture		
Bertot et al. (2010)	Social media in general	Transparency	Social readiness, technology penetration		Culture of transparency access of government agencies		Technology capabilities, technology readiness
Li et al. (2010)	Microblogging	Government and netizens relationship	Immaturity of internet users		Selective listening and response; the "show" effect; mismatch between users' expectations and actual effects		
Bertot et al. (2012)	Social media in general	General purposes	Access and social inclusion		Governing and government	Privacy, security, accuracy and archiving	
Cui (2011)	Microblogging	General purposes		Lack of laws and regulations	Lack of operating mechanisms, lack of marketing measures		
Kavanaugh et al. (2012)	Social media in general	General purposes		Policy, legal issues	Costs and training	Communication information,	Technology
Liu et al. (2011)	Microblogging	Internet politics and informatization		Lack of relevant regulations	Lack of collaboration, lack of institutions		
Picazo-Vela et al. (2012)	Social media in general	General purposes	General context	Institutional framework	Interorganizational collaboration and networks, organizational structure and processes	Information and data	Technology
Qu (2011)	Microblogging	General purposes	Verbal aggression, opinion disorder			Threats to confidentiality,	
Han (2012)	Microblogging	General purposes			Lack of unified guidelines, weak marketing, low level of interactions		
Deng (2011)	Microblogging	General purposes	Emotional expressions			Threats to confidentiality, information accuracy and authority	
Zheng and Ren (2012)	Microblogging	General purposes			Inconsistent identity, short active period, rigid and inconsistent language styles, lack of cross-boundary collaboration	Irrelevant information, low frequency of information updates	
Zheng (2012)	Microblogging	General purposes			Low level of transparency and interaction, attention to the government rather than general public, rigid forms and language styles		

the external environment and the internal capabilities of Chinese government agencies when using microblogging?

The author conducted an empirical study and collected data with two methods. One is focus groups carried out from April through June, 2011, with 78 civil servants from various Shanghai Municipal Government agencies and county governments with brainstorming methods. Brainstorming is a group creativity technique to find a conclusion for a specific problem by generating, gathering and combining ideas contributed by group members. The four general rules of brainstorming are focusing on quantity of ideas, withholding critics, welcoming unusual ideas, and combining and improving ideas (Osborn, 1963). During the group brainstorming, participants were divided into ten groups facilitated by the author to discuss the drivers and challenges of using microblogging in government and the capabilities of using microblogging in government. After discussion for 1 h, each sub-group presented their answers to the whole group and posted their answers on the blackboards in the room. The author and the group members then combine similar and duplicated ideas with a single label and cluster them into different categories through discussions. The group interactions were tape-recorded and the results of brainstorming were recorded with documents.

The other method for data collection is in-depth interviews conducted from July 2011 through December 2012. Seven of them are scheduled in July and August, 2011; two of them are conducted in December in 2012, and three of them are completed in December 2013. Semi-structured interviews were conducted by the author with managers in twelve influential government microblogging accounts in Shanghai, as well as managers who are responsible for government microblogging accounts in the two major microblogging service providers in China. The twelve government microblogging accounts were launched for the purposes of disclosing government information, providing public services, responding to emergencies and fostering interactions between the government and citizens. The main questions used for the semi-structured interviews are: 1) What external factors do you think have driven government agencies to use microblogging? 2) What external challenges are government agencies faced in using microblogging? 3) What internal strengths and weaknesses do government agencies have in using microblogging? and 4) Overall, do you think government agencies are capable of use microblogging to interact with the public? Why or why not?

Data collected were then recorded, transcribed and analyzed by the author following the process of grounded theory techniques to identify common patterns with an inductive approach. Grounded theory is defined as deriving theory from systematically gathered and analyzed data through research (Strauss & Corbin, 1998). Coding is a process of labeling, separating, compiling and organizing data (Charmaz, 1983). Three types of coding methods, open coding, axial coding, and selective coding, were adopted to analyze and interpret qualitative data (Strauss & Corbin, 1998). During the data analysis, the qualitative software tool (Atlas.ti) was employed to support coding and analysis activities. Common patterns were identified, coded and categorized into external drivers, challenges, and internal capabilities in five dimensions: 1) social and economic; 2) political, legal and policy; 3) organizational and management; 4) information; and 5) technological.

4. Findings

4.1. External drivers

The study finds a number of external drivers for Chinese government agencies to run microblogging. They are elaborated as follows:

4.1.1. Pervasiveness of IT devices

In the past decade, the living standards in China have been greatly enhanced. Consequently, the pervasiveness of personal computers, smart phones and tablet PCs is increasing dramatically. Meanwhile,

microblogging develops quickly in society and the number of microbloggers is growing fast. Some users pointed out that microblogging services such as Sina Weibo and Tencent Weibo are stable in use and easy to operate. According to interviewees, the pervasiveness of IT devices and the easy-to-use of microblogging have provided a critical foundation for government to use social media to interact with citizens.

4.1.2. Rising citizen participation

The rising interests of Chinese citizens in participating in public affairs have also propelled government agencies to use microblogging. As a new tool of communication and interaction, microblogging has drawn high public attention since 2009. Citizens use this platform actively to read news, express their opinions and participate in discussions on public affairs. Some interviewees believe that citizens' increasing interests in public affairs make it necessary and urgent for government to use microblogging as a new tool to interact with citizens.

4.1.3. International influence

Over the last few years, using social media in government has become increasingly popular around the world. In many countries, government agencies and senior officials use social media for political elections and political communication. A few interviewees mentioned that this international trend has also influenced Chinese government agencies to use microblogging to interact to some extent.

4.2. External challenges

Civil servants interviewed in the study also identified a couple of external challenges for government use of microblogging. These challenges are as follows:

4.2.1. Digital divide

Some participants worried that microblogging users only account for a small percentage of populations in society and are mostly young people in middle class, while the elderly and the poor could rarely use microblogging. This situation is unlikely to be improved in the near future. Therefore, due to digital divide, the voice of non-microbloggers may be ignored and their interests will be marginalized on government microblogging.

4.2.2. Low trust in government

Chinese citizens' low trust in government constitutes a significant challenge for government use of microblogging. A number of interviewees acknowledged that Chinese citizens' trust in government declines seriously in recent years and the government is facing a huge challenge. "For whatever information released on government microblogging accounts, the public would hold a skeptical attitude. This situation makes it hard for government microblogs to play their roles. Instead, they may become laughingstocks for the public," a government microblogging manager said.

4.2.3. Hackers and "water army"

The complexity of internet world in China also threatens government microblogging. Interviewees were concerned about hackers' attack, and government microblogs are especially threatened by hacking. A government microblogging manager said: "Although Sina Weibo and Tencent Weibo claimed that they would guarantee the security of government microblogging accounts, government microblogging is still threatened by malicious intrusion. A government microblog in Dalian City has just suffered a hacker attack."

Internet "water army", a specific group of internet users also composes a challenge. The term of "water army" refers to ghostwriters who are paid to post online comments with particular commercial or political intentions. These comments could manipulate, mislead and cover up public opinions for the benefits of special interest groups, and make it hard for government to recognize real public opinions. As

a result, government may be misled by the “water army” in making decisions and public policies.

4.2.4. Technological substitution

Civil servants also doubt about the sustainability of microblogging and fear that its popularity won't last long with the rapid development of information technology. One interviewee said: “Government websites, mayor's mailboxes and the official blogs which were once hot for a time but are forgotten now might be lessons for government microblogging.” another participant worried that “what if microblogging is abandoned by internet users after the government have put a lot of manpower and resources into it? Wouldn't it be worth?”

4.3. Government capabilities: strengths

The study examined the capabilities of government agencies in using microblogging. The findings discover both strengths and weaknesses. The strengths identified are listed as follows:

4.3.1. Adequate ICT infrastructure in government

Interviewees indicated that after years of e-government development, most government agencies have now possessed adequate ICT infrastructure and have been well equipped with computers, servers, networks and necessary hardware facilities and software applications. All of these have provided a strong foundation for the government to run microblogs.

4.3.2. Abundant information resources

Abundant information resources in government also seem to be an advantage. With huge investment in e-government in last decade, Chinese government agencies now possess a wealth of information resources to support the operations of government microblogs. As many civil servants mentioned, the government is now the largest reservoir of authentic and timely information in society, with microblogging and abundant information resources government agencies have great potential to disseminate rich and real-time information to the public.

4.4. Government capabilities: weaknesses

A number of weaknesses in government capabilities in use of microblogging are also identified. They are described as follows:

4.4.1. Low Leadership attention and supports

The study finds that the rapid development of microblogging has gained attentions from some government leaders. Some government microblogging accounts were launched at their direct requests. One interviewee mentioned: “Leaders in our bureau placed serious emphasis on government microblogs. The project was fully funded and staffed, and trainings and working sessions were held regularly. Leaders in various offices also opened their personal microblogs to interact with our institutional microblog.”

However, more government microblogging managers pointed out that although their leaders requested them to open government microblogs, they didn't really pay attention and support to them. That is to say, those leaders just stressed the importance of government microblogging by words, but did not provide necessary personnel, financial and material resources. In addition, the attention of the leadership frequently shifted, which also affected the stable and sustainable operation of government microblogging.

In particular, several civil servants emphasized that in the current Chinese administrative system, the attention and support from leaders are extremely important to and are the key to success for government innovations like microblogging. “The reason why some government microblogs are abandoned is that they didn't earn full attention and support from the leadership. Therefore, a number of microblogs become an object of ‘display’ by the government”, a microblogging manager

stressed, “Currently, what concerns us most is the support of higher authorities.”

4.4.2. Lack of competent management institutions

As a brand new task, managing microblogging is not a routine work of any current functional departments within government agencies. There are no existing policies and guidelines in government to follow as well. A couple of interviewees indicated that government agencies are still experimenting which department should be responsible for taking the lead and managing government microblogs. The study finds that, in practice, the function of managing microblogs in Chinese government agencies are mostly placed in publicity offices, general administrative offices, Youth League committees, or other functional departments.

Managing government microblogging by different institutions brings different challenges respectively. Publicity offices usually are strong expertise in disseminating information to the public and building external relations but are not strong in cross-department coordination. General administrative offices are capable of cross-department coordination and enjoy a relatively higher status over other functional departments, but are not competent in interacting with the general public. Youth League committees, whose members are basically young staff under 28, are quite skilled in using social media tools to interact with young citizens and mobilizing young people in government agencies. However, Youth League committees are not formal functional departments in government agencies; therefore, they are not in good positions of collection information from and coordinating across various functional departments in government. In the study, only one government agency has established a specified new division to manage its microblogging account. The new division is placed within the general administrative office and staffed with young people from the publicity department and the general administrative office. With this arrangement, the division enjoys strong cross-department coordination power within the government and skilled proficiency of interacting with the public.

4.4.3. Lack of designated staff

The study also finds that most agencies have not set up designated posts for government microblogging management; instead, they simply assign current staff to operate microblogs on a part-time and rotation basis. Only very few departments introduce full-time posts for microblogging operation. Interviewees contributed this to the uncertain future of government microblogs. Some staff are not willing to work on microblogging management as full-time position, because they fear that their positions may be marginalized or removed once their leaders shift their attention away from government microblogs. One microblogging manager gave a vivid description: “No one wants to work full-time on microblogging, because no one wants to ‘die’ on it”.

Therefore, workers in many departments take shifts to manage microblogs. A microblogging operator mentioned, “We do our job in shifts from Monday to Friday. Only when the one who is on duty that day has some spare time, would he (or she) post information on microblogging.”

For some operators, a shift may last from three months to six months, so that their original posts won't be affected. Once an operator is on the shift of operating government microblogging, he or she is not required to work on other tasks until the shift is over. A major advantage of this arrangement is that the experiences that an operator accumulated during his or her shift would hardly pass on to his or her successors, and the consistency of microblogging content is thus jeopardized.

The part-time arrangement also wears out government staff. Some microblogging operators complained that while the current workload for civil servants are already quite heavy, the burden for managing government microblogging makes them even more stressful. A government microblogging operator said: “There are only six people

in our office. In order to take care of all the tasks, we have to take turns to work on microblogs. Before long, we feel exhausted.”

In fact, the study emphasized that overall Chinese government agencies do have great potential of human resources to be allocated to managing government microblogs. One source is the human resources within the government. “China has a large number of civil servants”, an interviewee pointed out, “many of them are young and master with network technologies. They are potential microblogging managers.” The other is the human resources outside the government. “Government can also use external human resources, such as experts, scholars and overseas returnees. These people could be invited as trainers and researchers to enhance the operation of government microblogging,” one interviewee addressed.

4.4.4. Lack of funds

The daily operation and management of microblogs require a certain amount of financial investment to cover operation cost, personnel cost, training cost, equipment cost and telecommunication cost. However, many government agencies reported that necessary funds and resources for operating government microblogs are not fully in place. One department staff stated that: “Our human and material resources are limited. We lack funds, equipment and professional supports.” Another interviewee appealed: “We hope for improved compensation with secured funds. Because government microblogging is a new task, there is no budget made for it at the beginning of this year. Both the hardware and software need to be improved next year. At least the operators need some extra compensation.”

Without specially allocated fund, in many departments expenditures on managing government microblogs were appropriated from the budget for general administrations or other purposes. A government microblogging manager illustrated: “The Bureau of Finance said that they haven't listed this item in their budget in advance, so they could not allocate any fund to us. Therefore, this year we used the overhead cost, which is from the General Administrative Office's expenditures.” “Other costs such as training and activities are not funded at all. Even our own finance staff wouldn't approve them, not to mention the Bureau of Finance.”

The study also finds that a good support of financial resources depend on the attention from the leadership. Many civil servants said, as long as the leadership paid solid attention to government microblogs, funds would not be a big problem.

4.4.5. Lack of skills

Since managing government microblogging is a new task for government staff, many current microblogging managers and operators still lack sufficient experiences and skills to operate government microblogging. Therefore, many government microblogging managers expressed their urgent need to receive professional trainings, particularly in skills of how to attract attentions and how to respond to the public in emergencies. “If you want to attract public attention, professional media trainings are very much needed to improve our capabilities.” “I hope there are regular trainings, and show us how to deal with unexpected things.”

4.4.6. Hierarchical process and centralized power

Running government microblogging is also restrained by the hierarchical review process and the centralized power. For information to be posted on government microblogs, some government agencies still adopt a traditional content review process across various levels to the high-level leaders. This substantially prevents the front-line workers and middle-level managers from interacting with citizens and responding to emergencies timely. A microblogging manager pointed out: “the review process is where the contradiction lies. If we response every microblogging post in accordance with the full-process review, timeliness will be hurt. With this process, we could only take official and diplomatic phases to respond to citizens.” “We are not free to

issue contents, and our hands and feet are tied by the review process. We must pass on across various levels for approval.”

Especially when coping with emergencies, going through the full process would miss the “golden time” for responding to public. “Now the government agencies must abide by the process. When things come they have to identify the responsible department first, and then ask for detailed information. After all processes were went through finally, the four hours of prime time have already passed”, stated by an interviewee.

Moreover, many leaders still put tight control on government microblogs and are reluctant to authorize front-line staff. A government microblogging manager mentioned: “at first, we could post microblogs' content freely. Only most critical information need approval from the leadership, other contents were left with ourselves to decide. Then, there comes a new leader in our office, and he wants to review all messages posted on the microblogging, our work was then stuck in trouble.” “The leader who is responsible for government microblogs views operating microblogs in the same way as editing a newspaper, and holds editing assemblies every morning and night.” The interviewee then urged: “we need a freer process. Only some crucial information need to be reviewed by the leadership, but some information, say, weather reports or useful service information, should be on our hands to publish.”

4.4.7. Closed and risk-averse culture

The closed and risk-averse culture prevailing in Chinese government organizations is found to be a barrier for managing government microblogs as well. Given China's authoritarian political system, openness and dialog with the public is considered by many staff as sources of risks and threats. Moreover, influenced by the long-time agency-centered (rather than citizen-oriented) administrative culture, government leaders and staff are not accustomed to interact with the public directly.

The study finds that that many government agencies show apprehension towards negative comments and criticism from citizens on government microblogs. Some government microblogging managers worried that citizens' comments and criticism would directly challenge and weaken governments' authority. One interviewee said: “Government microblogs might result in social discord. They may also give a vent for disadvantaged groups to show their angers and malicious comments, which would pose negative impacts on the image of government.” Another civil servant mentioned: “At present, speech on the internet is relatively free on the internet. Government microblogs may become the target for malicious attacks.” Some microblogging managers are afraid of making mistakes and choose to avoid direct interaction with citizens. One civil servant showed his hesitation: “If you respond with insufficient or inaccurate information, you could not satisfy the public needs; if you put aside questions, people would feel ignored. It is quite a dilemma.”

4.4.8. Lack of horizontal collaboration

The study also finds that most government microblogs are lack of information sharing and operational collaboration. Especially in dealing with emergencies, there are no strong joint efforts among institutions to disseminate information and respond collectively. A manager of a railway station microblog gave an example: “our services are information-based. The information supported by other departments is rather important in emergencies, but very often information support from other transport units is way beyond our grasp. The customers felt that they cannot receive any information from our microblogs, but the truth is that we didn't have that information either, because we didn't get any information from other departments. Talking about this accident on high-speed railways, we didn't receive any notifications from the dispatch center and other transportation partners. Actually, we knew about this accident by searching information by ourselves on the internet. Without any information provided by our partners in the transportation system, it is not surprising that we couldn't serve the passengers well.”

4.4.9. Information security

Government agencies are also concerned with the information security and confidentiality on microblogs. One microblogging manager stated: “Microblogging is run by a third-party company rather than government agencies themselves, once government's confidential information was revealed on the internet, it would be difficult to have the situation restored”. With this concern, government agencies hesitate to post information on microblogs.

However, it is also found that sometimes confidentiality becomes an excuse for government microblogs to post information selectively or even remove information that might have negative impact on government. A civil servant mentioned: “Government agencies usually release information in their favor. Information with negative effects is regarded as confidentiality and won't be posted. In this way, microblogs become the ‘honor roll’ for government agencies to show their ‘outstanding’ achievements.”

4.5. Summary

With above analysis, a number of external drivers and challenges that Chinese government microblogs are faced with and the capabilities of government agencies in using microblogs were identified. These factors can be categorized into five dimensions: social and economic; political, legal and policy; organizational and managerial; information; and technological dimensions (see Table 2).

5. Discussion and implications

5.1. Society: open and networked

The analysis of the external factors indicates that thanks to advanced IT devices and social media applications, rising citizen participation and international influences, Chinese citizens now enjoy relatively more freedom in receiving and spreading information than they can in the

past when the government exercised tight control over information access and flow through dominating mass media. Thus, social media applications have shifted the information access and flow to some extent, in China from a vertical, centralized and closed model into a horizontal, decentralized, and open network. Social media tools like microblogging, have played a critical role in improving the public's awareness in voicing their concerns, participating in public decision making and policy making. This created a major drive for Chinese government agencies to use microblogging to interact with citizens.

5.2. Government: closed and centralized

Faced with dramatic changes in the external society, the Chinese government agencies still remain closed, risk-averse and authoritarian to some extent with regard to government–society relations. While within government agencies, hierarchical process, centralized power, insufficient resources and lack of horizontal collaborations have blocked front-line workers' and middle-level manager' use of social media to interact with citizens effectively. In addition, the current management mechanism and staff skills in Chinese government agencies are not fully prepared to deal with the use of social media yet.

5.3. Incompatibility: government vs. society

In general, it seems that the government capabilities are incompatible with the nature of the external society. In other words, in social media age, Chinese governments' internal capabilities are not adequate in using social media to cope with the changes in external society. Thanks to the pervasiveness of social media, the Chinese society is increasingly upgraded to Web 2.0 version featured with openness, network and decentralization, meanwhile, Chinese government agencies still remain in Web 1.0 version characterized with closure, hierarchy and centralization. As results of this contradiction, Chinese government microblogs often perform inadequately, improperly or with delay

Table 2
Chinese government use of social media: drivers, challenges and capabilities.

Dimensions	External drivers	External challenges	Internal capabilities	
			Strengths	Weaknesses
Social and economic	Rising citizen participation	Digital divide		
		Hacker and water army		
Political, legal and policy	International influence	Low trust in government		
Organizational and management				Low leadership attention and supports
				Lack of competent management institution
				Lack of designated staff
				Lack of funds
				Lack of skills
				Hierarchical process and centralized power
				Lack of horizontal collaboration
Information				Closed and risk-averse culture
			Abundant information resources	Information security
Technological	Pervasiveness of advanced IT devices	Technological substitution	Adequate ICT infrastructure in government	

when interacting with the public. One interviewee illustrated: “Government is a relatively conservative organization, and is used to remain an authoritative, serious and impartial self-image. However, the internet is a place of liberty full of individualistic users, which contradicts with the government culture.”

5.4. Comparing findings from China and from Western countries

Many of these factors have also been identified by prior studies conducted in western countries. It may indicate that practices of using social media in government do share many similarities across nations despite different contexts among them. Centralized review process, “water army” and international influence seem to be the three unique findings from China. The centralized review process may have reflected China's top-down and unitary administrative system. Internet “water army” may be caused by China's social and economic environment, in which it is neither difficult nor expensive for companies to hire people to post comments with particular intention in order to mislead or conceal true public opinions. International influence may suggest the fact that most IT applications and government innovations were first invented by developed countries and are introduced into developing countries such as China later.

However, given that current studies on government use of social media are conducted with different methods with different types of government agencies and with different social media tools, a comparison among these researches may not be convincing. Therefore, parallel comparative studies conducted with same or similar methods in different countries will be necessary in the future to identify similarities and differences among different countries.

6. Recommendations

Based on the analysis above, the paper makes some recommendations to government in China and other countries faced with similar challenges. First of all, government agencies need to enhance their organizational capabilities to fit with the external environment in social media age. Specifically, government agencies should take a systematic strategy to transform institutional structures, decentralize power, streamline process, change organizational culture, and enhance collaboration across various boundaries, in order to cope with the changes in society. Especially, government leaders should provide government microblogs with substantial supports and resources. Government agencies should also provide more training to staff to improve their skills to use social media. In society, government should also make efforts to bridge the digital divide, encourage more participation from all stakeholders in the society, and restore citizens' trust in government.

7. Conclusions and directions for future studies

This paper examines the external drivers and challenges that Chinese government institutions are faced with when using social media and also explores internal capabilities of Chinese government agencies in using microblogging. Future studies could take a quantitative approach to test the correlation between the influencing factors identified in this study and the performance of government microblogging. Moreover, this research collects data only from participants in Shanghai at Municipal level with government microblogs with certain types of purposes such as disclosing government information, provide public services, respond to emergencies and foster interactions between government and citizens. Therefore, the findings of this study may not be generalized to other cases and other social media tools. Future studies could extend samples of government microblogs to other regions at different government levels

with different purposes in order to improve the representativeness of the study. Future studies could also differentiate and compare findings from different government agencies for different purposes using different types of social media tools. Furthermore, parallel comparative studies can be conducted to compare the factor identified in China and in other countries with the same or similar research methods and instruments.

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