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# What factors drive open innovation in China's public sector? A case study of official document exchange via microblogging (ODEM) in Haining

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## ABSTRACT

Government transparency and information disclosure have received increasing attention from both academics and practitioners with the development of information technologies (ITs) and the Internet. Moreover, the popularity of social media applications has provided governments, especially governments in China and other developing countries, with new opportunities and challenges associated with the administrative shift toward open innovation. The official document exchange via microblogging (ODEM) of the Haining Bureau of Justice is a practical case of government open innovation in the social media context. Based on the ODEM case, this study uses the technology–organization–environment (TOE) framework to explore the factors that drive open innovation in China. We find that the support of top managers, the access and competence of IT personnel, and the regional economic and social environments are key determinants of the emergence of open innovation in the public sector.

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## 1. Introduction

The popularity of social media applications is changing people's lives by expanding the mobility and timeliness of communications within the digital domain. In the last five years, with the development of mobile communication technologies, microblogging services have become some of the most popular social media applications. For example, Twitter has gained 500 million registered users worldwide. Meanwhile, based on different language environments, many developing countries have created their own microblogging service websites. In China, Sina Weibo, a hybrid of Twitter and Facebook, acquired approximately 135 million registered users between March 2010 and March 2011, thus becoming the leading microblogging platform in China (Kenneth, 2011).

Although microblogging service websites were originally perceived as entertainment platforms, their influence with respect to promoting public participation cannot be ignored. Wattal, Schuff, Mandviwalla, and Williams (2010) contended that Web 2.0 technologies offer opportunities for active participation with and the integration of various forms of media. In his 2008 U.S. presidential campaign, Barack Obama reached out to millions of people via electronic means, such as blogs and video sharing, providing voters with both the ability to receive information and the opportunity to interact and become directly involved with the campaign and each other. Recent events in Egypt and other

Arab countries have demonstrated that social media and public access to the Internet serve as platforms that support the creation of social coalitions and encourage civic engagement (Qureshi, 2013).

Although open innovation initiatives originated in the private sector, a growing number of public sector organizations are also undertaking open innovation projects. For example, the U.S. government has made important commitments to the Open Government Initiative, which enables the public to access government data and to contribute ideas and expertise related to government policymaking and service innovation. In China, government agencies and officials are increasingly establishing their own microblogs. According to the 2014 Report on Government Microblogs, which was edited by the People's Daily Public Opinion Monitoring Office (PDPOMO), there were 130,103 Chinese government microblogs on Sina Weibo in December 2014, of which 94,164 were government agency accounts and 35,939 were government official accounts (PDPOMO, 2015).

What factors drive open innovation initiatives in China's public sector? This study focuses on an open innovation project called official document exchange via microblogging (ODEM), which was implemented by the Bureau of Justice in Haining, a city in southeastern China. Under the ODEM system, all non-confidential official document exchanges are conducted on Sina Weibo. Both government employees and citizens can read official documents and post comments. On April 2, 2011, the Bureau released the first document on its official microblog and was thus among the first agencies in the nation to publish notices and regulations via a microblog (Fu, 2011). On the one hand, ODEM helps the public understand how the government functions and how policies

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are made. On the other hand, ODEM helps the government reengineer its internal processes and formulate better policies based on online public responses.

To promote this type of open innovation project, based on the case of the ODEM project, this study uses the technology-organization-environment (TOE) framework to explore the determinants that led to the adoption of this open innovation initiative in Haining. The results show that three key determinants—the support of top management, the access and competence of IT personnel, and the regional economic and social environments—play important roles in the emergence of ODEM and that they could have effects on similar open innovation practices in China's public sector.

## 2. Literature review

### 2.1. Open government: from websites to social media

Open government information has always been an important issue. Considered a basic characteristic of good government by many nations (Hardy & Williams, 2011), transparency became an important issue during post-World War I negotiations (Bertot, Jaeger & Grimes, 2010). Government information disclosure aims to provide access to information to those who are relevant to or affected by specific government decisions (Kim, Halligan, Cho, Oh, & Eikenberry, 2005). Advancing the right to access government information is also regarded as an effective way of improving decision making and preventing corruption (Kierkegaard, 2009). More than 80 countries have established some form of freedom of information standard, and half of these policies have been instituted within the last decade (Vleugels, 2008). China is no exception. In the early 1980s, the Chinese central government adopted an opening-up policy, thus giving the public access to administrative rules and procedures (Piotrowski, Zhang, Lin, & Yu, 2009). On January 17, 2007, the State Council of China approved the Regulations of the People's Republic of China on Open Government Information, marking “a significant shift from the culture of government secrecy to transparency in China” (Rana, 2015, p. 131). However, traditional information disclosure is characterized by a one-way information flow and a lag in open communication (Yildiz, 2007).

In the era of social media, social media tools enable government agencies to “leverage bidirectional interactions with citizens” and thus enhance transparency to “become more engaging and participatory by reaching previously underrepresented segments of the population, and to include all stakeholders in collaborative processes” (Mergel & Bretschneider, 2013, p. 391). The Obama administration proposed the creation of an Open Government in 2009. The targets of the Open Government Initiative include transparency, participation, and collaboration. However, Lee and Kwan (2012) argued that these three targets are not equivalents, as transparency is the primary target and participation and collaboration build on that transparency. When governments create social media accounts, they can provide access to government information, but the distribution of such information via social media is completely different from open government information in the traditional context. That is, this openness no longer involves merely one-way communication. Grant, Moon, and Grant (2010) regard Twitter as a good solution to resolve information-sharing problems that used to exist in the government transparency process via traditional media, as microblogs potentially allow for fluent communication flows between the government and the public (Golbeck, Grimes, & Rogers, 2010). While investigating the impact (other than transparency) of various social media tools, Bonsón, Torres, Royo, and Flores (2012) determined that these additional tools also help improve communication and strengthen citizen participation (Mergel, 2013). For example, governments are implementing open data initiatives as a new approach to increase participation and interaction (Yang & Kankanhalli, 2013). In addition, social media stimulates government innovation (Criado, Sandoval-Almazan, & Gil-Garcia, 2013). Chatfield, Scholl, and

Brajawidagda (2013) explored the role of social media in mitigating natural disasters through early warning systems.

In China, the popularity of social media tools also “impels the public sector in China to launch government microblog accounts as innovations to disclose government information and foster interactions between government and citizens” (Zheng & Zheng, 2014). Noesselt (2014) contended that Chinese government microblogs have five general functions: to distribute officially approved information, to sway public opinion, to strengthen people's trust in the political regime, to create a positive image of the Chinese government and to promote a new type of citizen participation by permitting online comments on selected topics.

### 2.2. Open innovation: cooperation and interaction

According to Chesbrough (2006), who coined the term, open innovation is “the use of purposive inflows and outflows of knowledge to accelerate internal innovation and expand the markets for external use of innovation, respectively” (p. 1). Open innovation is “a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as they look to advance their technology” (Chesbrough, 2006, p. 1). Adopting this new paradigm, many firms have created new products and services through internal collaboration and external cooperation with various partners (Tsou & Hsu, 2015). Corporations such as Intel and Procter & Gamble have gained substantial benefits from external innovation opportunities.

Open innovation methodologies also benefit the public sector through the “improved awareness of social problems, more effective practices based on broad citizen experience, and increased trust between government and citizens” (Mergel & Desouza, 2013, p. 883). In contrast to the private sector, where innovations aim to result in a competitive advantage, public agencies primarily engage in innovation to enhance service performance and public value. Mergel and Desouza (2013) argued that public agencies generally have rules and regulations that govern their interactions with the public and their ability to source effective solutions and that most of these rules and regulations are based on the traditional mode of contracting, which requires that agencies know the solution in advance and that they work with pre-screened vendors to achieve that solution. With respect to open innovation, public agencies have a greater degree of freedom in sourcing solutions but limited assurance that the solutions that citizens provide will be useful or even implementable (Mergel & Desouza, 2013). From the perspective of public policy, De Jong, Kalvet, and Vanhaverbeke (2010) explored the possibility of developing a public policy framework to facilitate open innovation. They argued that policymakers have a major responsibility to develop policy measures and to shape institutional and legal contexts to stimulate open innovation practices in an economy. Moreover, policymakers can also legitimately “support and facilitate innovation as market and system failures persist in an era of open innovation” (de Jong et al., 2010, p. 892). Furthermore, de Jong et al. (2010) identified several policymaking guidelines. In addition to R&D and interaction-oriented policies, they concluded that open innovation involves a broader range of policy areas, including entrepreneurship, education, science, labor markets and competition. In summary, open innovation, which emphasizes cooperation and interaction, may also lead to organizational changes in the public sector.

### 2.3. Factors that influence the adoption of open innovation in the e-government literature

Thus far, we have found only one study that directly explores the factors that influence open innovation initiatives in the public sector. Investigating the case of Challenge.gov in the U.S. and the role that public managers play in the implementation process, Mergel and Desouza (2013) discussed the organizational barriers that public

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