

# The Orientation-Maturity Framework for Understanding the E-Government Key Issues in China

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## Abstract

*Chinese government has long been striving to promote the development of e-government in near several years through utilized lots of information communication technologies (ICT) in public sectors for accelerating administrative transformation. The e-government projects from different sectors of Chinese government, however, often start from multi-objectives and perform in thousands different ways. For describing the general characteristics of e-government in China, this paper investigates the key issues of the e-government application and management in China. Based on data collected from Chinese governmental employees, the paper orders the e-government key issues and discusses the implications of the findings based on the orientation-maturity framework, a specific analytical framework developed in the paper. The findings may provide helpful reference for both practitioners and scholars to better understand the current situation of e-government in China and response the forthcoming challenge of administrative transformation due to ICT diffusion and utilization.*

## 1. Introduction

As China has shifted from an isolated centrally-controlled economy to a market open to the global economy [1, 2], the fundamental administrative reformations are taking places in both central and local governmental institutions for adapting the new economic system [3]. The change from control style to service style of government is the principal goal of the administrative transformation of China in the global economy [4].

During the course of such transformation, the penetration of information communication technologies (ICT) and the development of e-government bring dramatic changes to organizations and individuals on various respects in Chinese

governmental context. As one of the driving forces of ICT application, the Chinese government has long been striving to promote the use of ICT and was rewarded with continuously rising ranking in the global chart of e-government application (or readiness) [5, 6]. Partly motivated by the preparation for the Olympic Games and the accession to the World Trade Organization (WTO), the development speed of e-government implementation in China has kept accelerating [7].

As advances in IT/IS provide many potential opportunities to cross-sectors integration and administrative process reengineering for improving public service and accelerating efficiency of government, the transformational government (t-Government) has provided as a novel e-government strategic plan by UK in 2005, based around the three key themes of citizen-centric government, the development of shared services and IT professionalism [8-10]. In several influential e-government development stages models, transformation or the similar procedure are often looked as the senior or even final stage of the e-government progress [11-13]. It is no doubt that ICT diffusion will lead to transaction integration, process reengineering and administrative transformation, for creating a more citizen-centric prefect government finally. Chinese government also expects to foster administrative reformations by transforming government functions, streamlining procedures, and enhancing administrative transparency through e-government applications in this context [3].

In order to describe the characteristics of e-government in China, our current work is aimed surveying the key issues in e-government management in the different-level public administrative sectors. Key issues in IT/IS management are generally defined as the set of main challenges facing IS managers over the next three to five years, which deserve most resources, time, and attention by IT/IS management [14]. As the IT/IS departments of today's government face various challenges in a fast changing environment, the key

issues of the e-government construction involve the government's main requirements, focus of attention and challenges with respect to the e-government construction in the current and coming period of time. The research on these key issues aims to explore the government's cognition and attitude towards related problems and discusses the government's focus in the process of construction, so as to figure out the experiences in the construction of e-government [15].

The research issues of the paper includes (1) finding the hot key issues of e-government in China in current time, (2) proposing the orientation-maturity framework for distinguishing key issues, (3) discussing managerial implications based on the proposed framework and survey results. In the light of data collected an empirical survey conducted in 2012 among governmental employees in Chinese different-level governmental sectors, we inspect the key issues in e-government application and management. Furthermore, we discuss the implications of the findings of e-government key issues in China based on the orientation-maturity framework, a specific analytical framework developed in the paper. We also discuss the e-government development strategies in the transformational China based on the analysis results. The findings may provide helpful reference for both practitioners and scholars to better understand the e-government development in China.

## **2. Theoretical framework**

### **2.1. Key issues research of IS and e-government**

In early 1980s, the first study that surveyed IS executives and managers in order to identify the key issues in IS management appeared in the Society for Information Management (SIM) of the US [16]. In that study, a set of candidate key issues was proposed by a group of experts from SIM and later evaluated by 417 members of the society. The result of the analysis indicated the most important IT/IS issues for US organizations at that moment. Later on, this method of gathering and reporting IT/IS issues has been replicated periodically in the US [15, 17-19]. Top issues were found to be changing evidently over time in these surveys and considered to reflect the evolutionary characteristics of IT/IS management in US organizations [20].

Since early 1990s, key IT/IS issues studies have been extended to other regions of the world [14, 21-26], including Hong Kong, Taiwan [27, 28], and Mainland China [29, 30]. From an industrial perspective, Computer Sciences Corporation (CSC) has kept

surveying critical IT/IS issues in enterprises all over the world annually since 1987, as well as providing incremental longitudinal analyses. By 2001, these surveys had been conducted 14 times, through which rich historical data accumulated and some trends in IS management were revealed [31]. Some other researchers compared and contrasted the findings of such surveys in various nations or regions, seeking to identify and explain regional similarities and differences. In 1991 and 1997, Watson et al. reviewed the key IS issues studies twice [20, 32], and stated that the ranks of the issues would much likely be influenced by four dominating factors, namely economic structure, national culture, political/legal environment, and technological status [20].

Regarding governmental organizations, the past two decades have witnessed dramatic development in IT/IS application in governmental organizations and the topic of "e-government" is increasing becoming one of the central research issues in the information systems area [33-35]. The adoption of IT/IS has brought significant impacts on the relationships between governments and citizens (G2C), governments and businesses (G2B), governments to employees (G2E), and governments and governments (G2G), which have strongly pushed the transformation of governments [9, 36, 37]. Along with the development of e-government application, policy makers and other practitioners are confronted with emerging challenges that are introduced with the new systems. In recent years, issues regarding IT/IS evolution, adoption, and diffusion in governmental organizations have been widely addressed on international academic conferences, as well as on major MIS journals [33, 38-40].

The early study of key IT/IS management issues in public sectors was conducted in early 1990s that some researchers tried to survey and discuss the diversity of key issue between governments and corporations [41]. Since that empirical researches of this topic have not been continued. However, with e-government developing, lessons have been learned from the practices including planning and implementation of numerous e-government initiatives all over the world. Scholars and practitioners have collected lessons about critical issues learned through case studies, surveys, and post-implementation audits which, if applied to future e-government initiatives, may increase the potential for their success. Base on these studies and practical experience, some researchers examined key issues or critical issues for e-government application through literature review [42, 43]. In this way, critical issues were identified as having significant impact on the success of e-government programs. Among these studies, program management and aspects of marketing

theory were used as frameworks to classify and analyze key issues [43]. Based on the insights towards e-government application and management provided by these existing efforts, the time is ripe for probing into the key issues in e-government management. Furthermore, it is reasonable to expect that key issues in e-government management would significantly differ from those for companies, due to the special characteristics of governmental organizations.

In Mainland China, key issues studies have also been conducted during the past few years, aiming at identifying certain important concerns of IT/IS managers and discovering longitudinal changes over years, as well as comparing them with those of other regions [29]. Although those studies are valuable for understanding the situation and challenge of IT/IS management in China, but they have not yet been extended to the governmental context by far.

## 2.2. Orientation: technology, service and organization

Many scholars have conducted research on the relationship among service, technology perspective of IT/IS use. Such research has the potential to be very important because of how it will influence the way people understand the relationship between a new technology and service, and in particular, it most likely would require the building of better user relationships and restructuring of the service function, which would allow technology to serve users better [44]. In the e-government context, “providing more services and more convenience to citizens,” is generally considered to be the essential target for e-Government applications [45]. When constructed, the model of e-Government user satisfaction used by Scott et al. (2007) divided the quality evaluation into system quality and service quality and used this distinction to describe the difference between technology and service [46].

An e-government system not only can be viewed as a type of information technology to improve government management, but it can also be considered a service function to enhance the capacity of the government's public service. Concern over the service function while abandoning information technology or concern over information technology while abandoning service function both result in bias. Some IS literature focuses on the user adoption of e-government services [47-49]. Wixom and Todd (2005) discussed user satisfaction instruments from three categories: information quality, system quality and service quality. Because their paper focused on the broader target of the IS function rather than on the individual application, however, the service quality has not been included in their validation of the model. Alternatively, in this

work, to evaluate continuance adoption with overall e-Government services, we gave more attention to the service perspective of users' perceptions [50].

In the study by Susarla et al. (2003) [51], a conceptual model of satisfaction with the application for providing the services, the authors attempted to divide the expectation concept into functional capability and technical performance guarantees. However, those two sub-factors are more specific to the situation. Moreover, in many e-government projects, organizational change should be considered beyond the technology and service perspectives.

Mirroring the connotative characteristics of e-government construction, the structure dimension is an application and a carrier of such theories as information system, customer relationship management (CRM), administrative ecology and knowledge management in the construction. The different goal of the e-government would lead to different results and evaluation. Therefore, the orientation dimension in the study is divided into three types of factors including technology, service and organization, whose definition is shown in the Table 1 as follows.

**Table 1. Factors of the orientation dimension**

<b>Factor</b>	<b>Definition</b>
<b>Technology Related Literature:</b> [42], [43], [44]	The software and hardware basis to guarantee the smooth operation of the e-government system and the technological means to ensure the safe and steady management of information flow.
<b>Service Related Literature:</b> [44], [45], [47], [48], [49]	The government's service items offered to users by e-government system and relevant measures to improve service value and efficiency.
<b>Organization Related Literature:</b> [44], [51]	The government makes improvements on organizational structure and management behavior in order to facilitate e-government construction or innovation on the government's management mode.

## 2.3. Maturity: inclusion, interaction and integration

The research on stage models of IT adoption can be traced back to some classical theories that tend to describe the development process of IT/IS application and utilization in organizations as connected phases consisting of evolution and revolution [52, 53]. Regarding to e-government, A few stage models also have been proposed [11-13]. Considering e-government from a perspective of the use of ICT to enhance the access to and delivery of government information and service to citizens, Layne and Lee (2001) provided a four stages framework for

understanding e-government development process, which includes the catalogue stage, the transaction stage, the vertical integration (local systems are linked to higher levels) stage, and the horizontal integration (systems are integrated across different functions) stage [12]. Siau and Long (2005) conducted a meta-analysis on several e-government stage models and synthesized a new one which includes five stages namely web presence, interaction, transaction, transformation, and e-democracy. Obviously, the transaction stage plays a very important role as a connecting link between the preceding and the following stages [13]. The follow-up studies develop more revised stage-model of e-government maturity [54, 55]. Although stage concepts have been defined for explain some phenomenon in e-government development, inclusion (presenting), interaction and integration were often seen as three fundamental stages.

**Table 2. Stages of the maturity dimension**

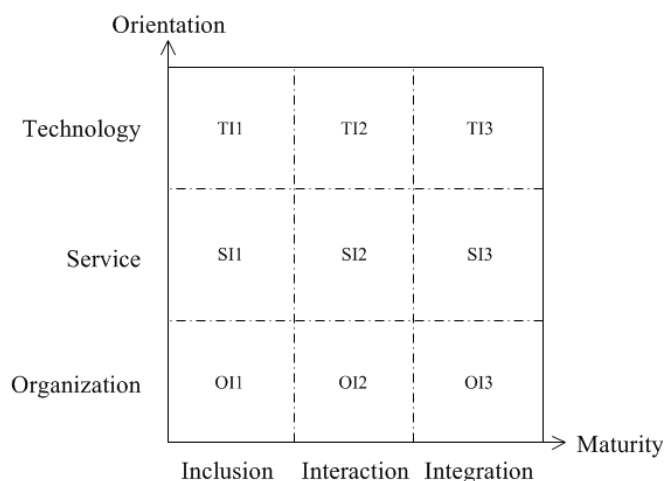
Stage	Description
<b>Inclusion (I1)</b>  Related Literature: [12], [13]	To motivate e-government strategy, the government establishes internal departments and staff responsible for building e-government and installing base software and hardware facilities, which reflects specific efficiency direction. It can improve efficiency inside the organization, reduce administrative costs and make online information inquiry very convenient for enterprises and individuals, which create conditions for the following construction of e-government.
<b>Interaction (I2)</b>  Related Literature: [12], [54], [55]	The government boosts fully development strategy of e-government and departmental cooperation and formulates scheme of e-government construction and management. On the basis of technological upgrading of e-government system, the government's service function will be gradually incorporated into the system, so as to lead people enjoy online administrative service and realize the online interaction between the public and the government.
<b>Integration (I3)</b>  Related Literature: [12], [54], [55]	The government makes overall planning for development strategy and technological framework of e-government, establishes a service philosophy centered on users in the construction of e-government and boosts initiatively organizational recombination and renovation of business process. Thus, it provides the general public with one-stop and seamless online service and constructs effectively performance management mechanism, so as to improve the government's administrative capability and social democracy and management innovation.

Maturity dimension reflects the influence of value on key issues. On the basis of e-government development, the promotion of maturity shows change of e-government construction from simpleness to complexity and low value to high one. The dimension falls into three stages including inclusion (presenting), interaction and integration, in which the maturity of the e-government is described as shown in the Table 2.

#### 2.4. Orientation-maturity framework

An appropriate analytical framework should endow the key issues with better sense of levels and higher differentiation, and meanwhile make researchers discuss conveniently the research results within the framework. Consulting the discussion of two dimension, orientation and maturity, mentioned in the above two section, this study tries to propose a new framework for distinguishing the e-government key issues. While the orientation dimension explores the connotative characteristics of the key issues related to e-government construction, the maturity dimension, substitute for the different core function in the different development stage of e-government. Hence, the orientation and maturity are used as two basic dimensions for supporting the analytical framework in the research.

With the division of orientation and maturity, the key issues possessing specific connotative characteristics and value influence can find its corresponding factors and stages from the two dimensions. Hence, a projective relation is established between the key issues and the two dimensions. Each key issues is corresponding to one quadrant in the "orientation-maturity" matrix as shown in the Figure 1.



**Figure 1. Orientation-maturity framework**

### 3. Empirical study

#### 3.1. Measurement of key issues

In first phase, we selected candidate key issues based on literature. In all 34 candidate items, 26 items inherited a key issues set from a former study conducted in corporate context in 2005 to 2006 [30], with some of the expressions of the issues were slightly adjusted for better consistence with the governmental context. The other 8 items were collected from some recent related work in the e-government area [40, 42, 43, 47, 56-59]. Table 3 shows the content and original literature of those 8 additional ones.

**Table 3. Additional Candidate Items**

Additional Items	Original Literature
The test and modification of the technical solution according to the feedback before officially running the system.	[40],
Adoption of the unified technical standards and integrity of the technical architecture.	[42]
The timeliness and effectiveness of information services.	[56]
The guarantee of information system to protect the privacy of our users.	[40], [43], [57], [58]
Consideration of the citizens' ability to use information technology during the construction.	[56]
Promotion and popularization of the awareness and usage of the e-government affairs to the public.	[40], [42], [43]
Adoption of the E-government system design and operation concept which is customer-oriented.	[59]
Introduction of the public value of the electronic government affairs to the public.	[47], [56]

In the second step, according to Delphi method, we try to establish the connection between the candidate items and nine quadrants in the research framework. The actual process of Delphi method includes three rounds e-mail surveys which respectively face to two expert groups (a practical group and an academic group). The first round of survey in was done to seven IT-management experts who work in Beijing government department and did not participate in the formal questionnaire of this study. The participating experts were requested to classify 34 items to a certain category of nine quadrants, or a category named "unable distinguished". The second round of survey was done to eleven faculties and doctoral students in the university who are engaged in the related research, they were requested to the do the same thing after reviewing the first round of survey results. The object

of the third round is the same as one of the first round, the experts in practice group were requested to make final judgment under the premise of fully considering the results of the first two rounds. After three rounds of the survey, experts' opinions have basically been convergent finally, 28 of 34 candidates key issues are classified as nine quadrants, the remaining six items are considered difficult to be part of any one single quadrant (see table 4). The six items basically illustrate the importance of continuous E-government affairs in different maturity stage. They relate to the field of technology, services and organization. Since this research attempts to interpret key issues in E-government by the Orientation-Maturity framework, we eliminate 6 candidate items and remain 28 ones in the final questionnaire.

**Table 4. Six Unable Distinguished Items**

No.	Items
1	The safety of information system.
2	Understanding and support of informationization from leadership.
3	The guarantee of information system to protect the privacy of our users.
4	Higher level of system maintenance (such as fault management, disaster recovery, etc.).
5	Optimizing the function of information system (including the increase, adjustment and improvement of system components).
6	Upgrading the old system.

#### 3.2. Survey

The survey samples are part of government employees who had participated in the series of training of "IT and government" hold by the author' university in last five years, the database includes 1,854 people in total. We randomly selected 185 candidates, 10% from them for distributing questionnaires. Our survey was conducted in January to March, 2012. In our questionnaire, we asked public sectors employees to rate 28 candidate issues in a five-point scale. The questionnaires were delivered via e-mail, online survey sites and face to face interviews. In total, we have got 128 responses. After excludes the incomplete ones, we got 108 questionnaires used in follow analysis finally.

The study combines convenience sampling and random sampling. We recognize that the fact that all respondents came from the same training program would lead to the sample bias. However, the direct random sampling surveys usually would got very low response rates. A survey based some alumni networking maybe were only viable option for getting sufficient number of replies. Moreover, since

respondents came from 21 provinces of China, we convince the results could show the general e-government key issues in China. The geographical distributions of the sample are shown in Table 5. Although they are working with different administrative levels, they are CIO of their sectors or the high level employees could have important influence in the decision making process of e-government issues in the sectors.

**Table 5. Geographical Distributions of the Samples**

Locations	Samples	Rates	Provinces
Eastern	28	25.93%	Jiangsu, Anhui, Zhejiang, Fujian, Shanghai
Sothern	11	10.19%	Guangdong, Guangxi, Hainan
Central	14	12.96%	Henan, Jiangxi
Northern	21	19.44%	Beijing, Hebei, Shanxi, Neimenggu
Northwestern	8	7.41%	Xinjiang, Gansu
Southwestern	11	10.19%	Yunnan, Xizang, Chongqing
Northeastern	15	13.89%	Liaoning, Jilin
Total	108	100%	

### 3.3. Reliability and validity

To test the reliability of our questionnaire, Cronbach’s Alphas of the nine quarters of the proposed framework was calculated (See Table 6.). The resulting Alpha was from 0.708 (for OI2) to 0.846 (for SI2). Reliabilities over 0.70 are general considered to be acceptable. Correspondingly, the reliability of our questionnaire was considered satisfactory.

**Table 6. Cronbach’s Alphas of the Nine Quarters**

Quarters	Orientation Factors	Maturity Stages	Amounts of Items	Alphas
TI1	Technology	Inclusion	2	0.717
TI2	Technology	Interaction	2	0.745
TI1	Technology	Integration	3	0.756
SI3	Service	Inclusion	2	0.777
SI2	Service	Interaction	4	0.708
SI3	Service	Integration	3	0.709
OI1	Organization	Inclusion	2	0.712
OI2	Organization	Interaction	5	0.846
OI3	Organization	Integration	5	0.709

ANOVA analysis was used to measure the validity of the instrument. The results showed that with a signification level of 0.01, the 28 issues can be differentiated. Therefore, it was considered valid to rank the issues with their average scores. Moreover, we

also used Fisher’s LSD (Least Significant Difference) for comparing treatment group means among night quarters. The results show that the key issues average scores of three orientation factors, technology, service and organization have significant differences among their three maturity stages.

## 4. Results and discussions

### 4.1. Top e-government key issues in China

After reliability and validity test mentioned above, we got the top ten ranking e-government key issues in China, Those key issues and their rankings and mean values are shown in Table 7.

**Table 7. Top Ten E-Government Issues in China**

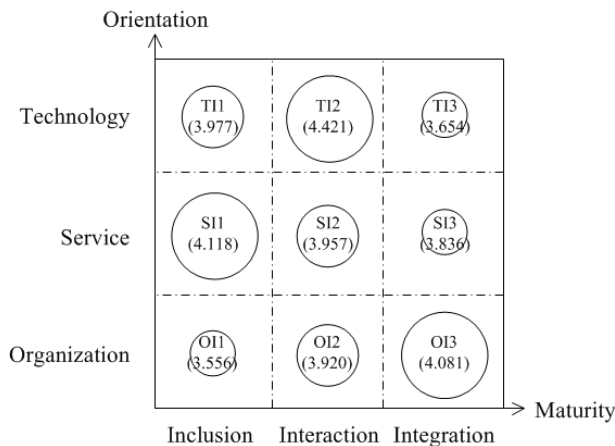
Rankings	Key Issues	Mean Values
1	Acquisition, organization, and utilization of high quality data	4.472
2	System integration between departments	4.398
3	Ensuring the timeliness, validity of information provided	4.324
4	Long-term and consistent ICT development planning	4.278
5	Aligning ICT in strategic planning	4.167
6	Work flow re-designing and organizational restructuring	4.167
7	Connecting governments, enterprises, and citizens through ICT	4.130
8	Testing, getting feedback and modifying the technical project before system running	4.065
9	Ensuring the ability of citizens to use the technologies involved	4.037
10	Internal managerial and organizational level of IT/IS departments	4.000

### 4.2. Comparison of the orientation factors

A comparative analysis is conducted by the average score of the issues in the quadrants. The construction subject’s characteristics of maturity stages in the different the orientation dimensions, technology, service and organizations can be revealed by comparing the score of the quadrants.

Among the three quadrants corresponding to the technology factor, the technology-interaction (TI2) acquires the highest score; the next is technology-inclusion (TI1), and the quadrant technology-integration (TI3) is minimum (See Figure 2). It is clear

that the value judgment of the present construction subject in terms of technology has surpassed the stages in which only simple information is applied and functions are realized by internet technology. And the characteristic of the value judgment corresponds with that of the technology-interaction, which attaches importance to more powerful technology adopting interaction and compatibility in the e-government system. Under such circumstance, the construction subject emphasizes the efficient and high-quality operation and interactive application of the information by means of technology. However, such characteristic also reveals that current construction subject fails to show great concern for the integration of the technical norms and integration of technical functions with respect to technology. Therefore, the quadrant of technology-integration acquires the lowest score among the technology factors.



**Figure 2. Analysis Results**

Among the three quadrants corresponding to service factor, the quadrant service-inclusion (S11) acquires the highest score; the next is service-interaction (S12) and the quadrant of service-integration (S13) is minimum (See Figure 2). It can be perceived that the value judgment of the present construction subject in terms of service remains in the lowest level of inclusion or presenting in the value dimension. It states that in respect of service, the most important thing for the government is to offer basic service to citizens by e-government system involving smooth approach, timeliness and effectiveness of information service. With respect to service, some higher-level key issues, including interaction with citizens by means of e-government system and the customer-oriented philosophy, have not become the essential focus of attention yet for the Chinese government. In fact, compare with the technology and organization parts, the differences among the means of three quadrants the mean of key issues related to

service are small. The results show that when the e-government develop into subsequent maturity stages, the service itself based on e-government platform still could not be ignored.

Among the three quadrants corresponding to organization factor, organization-integration (OI3) acquires the highest score; the next is organization-interaction (OI2) and the quadrant of organization-inclusion is minimum (See Figure 2). It can be seen that, in terms of organization, the value judgment of the current construction subject meets the characteristic of the level of integration. The government focuses on the overall planning of e-government construction strategically, establishment of sophisticated construction and management mechanism from the project level, formulation of reasonable planning in the construction of e-government, reform of the existing organization structure and business process, as well as enhancement of internal innovation mechanism. And meanwhile, the result also proves that the value judgment of the current construction subject in terms of organization has exceeded the level of inclusion and interaction. The government has ended up with the most attention to basic organizational support and cooperation for appropriate construction and management mechanism.

### 4.3. Relations between orientation and maturity

In the orientation-maturity framework, the feature of the quadrant with highest criticality equivalent to each factor in the orientation dimension shows the e-government constructor's concern. In the figure 2, the size of the circle represents the criticality of the quadrant. As the figure shown, the orientation-maturity relations of the current Chinese e-government could be featured as technology-interaction, service-inclusion and organization-integration. It can be perceived that, in terms of the influence on e-government construction, the construction subject's attitude towards and cognition about organization precedes the technology and is far ahead of service. Consequently, in accordance with such value judgment, the government will particularly emphasize their greatest efforts in organization in the course of e-government construction, less in technology, the least in service. To analyze the leaping orientation-maturity relation in China's e-government construction by combining related background analysis of the current e-government development in China, we should discuss as follow.

First, receiving great concerns of governments at all levels, e-government construction occupies high strategic position. China proposed e-government to

enhance administrative efficiency and reduce costs in the 11th Five-year Plan (2006-2010). Afterwards, a great number of provinces and cities introduced one after the other the local 11th Five-year Plan concerning e-government, in which the significance of top design and overall plan is emphasized. Then At the China's 12th Five-year Plan (2011-2015) demonstrates that both central and local governments at all levels pay close attention to the development of e-government and regards the e-government construction as an assistance to strategic restructuring of the economy, protection and improvement of people's livelihood, enhancement and innovation of social management, promotion of government which is service-oriented, responsible, lawful and honest. The central government's focus on the development of e-government makes local counterparts at all levels pay more attention to the integrated and overall planning of information construction, further rely on e-government to enhance internal innovation, make plans initiatively inside the organization and implement recombination of workflow and organizational reform.

Second, interaction and compatibility constitute the principal focus of the current government with respect to technology. The fundamental soft hardware facility has been basically built. On the basis of it, to better realize the function of e-government in protecting people's livelihood and innovating social management, the government needs to employ technical means with stronger interaction and compatibility in the e-government construction. For example, in terms of the protection of people's livelihood, some functions, such as interdepartmental information sharing in the field of social security, multi-function business cooperation in administrative service, requires of realization. In respect of social management, some roles, such as overall cover, dynamic track, natural calamities and the forecast, early warning, analysis and evaluation of public emergency event in the field of safety supervision. The current government is willing to promote online work and strengthen interaction with citizens, which is also the voice of the society. The achievement of all these functions requires of technical means with stronger interaction. And meanwhile, the availability of compatibility also lays the foundation for further overall technological integration of e-government system.

Third, the government is relatively backward in service philosophy of e-government. To develop e-government acts as a strategic measure to build service-oriented government with which people are satisfied. In recent years, although the development of e-government plays an important role in improving public service, the government pays less attention to service philosophy and capability in e-government than

to organization and technology. During the process of offering related application and service by using e-government system, there are numerous issues, such as low integration of administrative and technological application, large gap between application effect and requirements of service-oriented government construction and difficult implementation of information sharing and concerted business. And it is particularly common that some leaders' mailbox remains irresponsive over a long period. In spite of the government's great efforts on offering high-quality and efficient information service, with the background of relatively mature technology, its attitude towards and cognition on service are comparatively backward compared with the strategic goal of overall improvement of public service quality and construction of service-oriented government. The reasons lie in that, on the one hand, the government is short of propaganda, education and supervision of service awareness among the public servants, of development of service functions, and of effective evaluation on service quality. On the other, compared with advancement of strategic significance in the organizational level and adoption of new technology in the system, it will take longer time to enhance awareness of the public servants inside the government and propose them to accept and use informatization comprehensively, which constitutes the main approach of disposing administrative affairs.

## 5. Conclusion

In the study, the analytical framework of orientation-maturity was proposed to differentiate the e-government key issues in China. After conducting questionnaire survey to employees of public administration sectors we analyze the empirical data of e-government key issues in China. In the orientation-maturity framework, the government's attitude towards technology, service and organization was discussed. It was revealed that in the current e-government construction, there were such relations as technology-interaction, service-inclusion and organization-integration, are important.

The proposed framework and related results have some practical implications as follow: For Academia, the novel framework provides a perspective for analyzing e-government development and trends based on key issues, by breaking the limitations of tanking discussion in previous related research. For government IT managers, the results not only help them to understand the basic level of Chinese local e-government development, but also provide evidence for supporting the planning of future e-government construction. In the follow-up studies, we will further



enrich and improve the orientation-maturity framework based on a more extensive literature scanning and more large-scale empirical surveys for better understanding e-government development in China.

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