Harnessing E-Governance Initiatives: Building Competence Organizations

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ABSTRACT

There is a problem with e-government initiatives. While significant investments have been made, the level of success is often questionable. We argue that organizational competencies need to be developed in order to ensure success of e-government initiatives. The lack of understanding organizational competence for harnessing e-government initiatives leads to failure of such initiatives. By analyzing the Korean G4C project, we integrate the organizational competence theory with three socio-technical perspectives (management, technical, and stakeholders) to facilitate understanding of organizational competence, which reduces the failure of e-government initiatives and ensures that e-government provides superior customer services.

Keywords: e-governance, Competence Organizations, Competitive Advantages, Heedful Interactions

INTRODUCTION

There is a clear difference between for commercial organizations and e-government organizations. E-government organizations do not seek competitive advantage rather they seek providing superior services to stakeholders. It is important to note that e-government is only a tool for better government; e-government should be value-driven not technology-driven. As Leitner et al. (2003) noted that e-government is not only about service delivery but it is away of life; it is also a key to good governance in information society. However, there is a problem with e-government initiatives. While significant investments have been made, the level of success is often questionable. Various studies have indicated that anywhere between 60-80% of e-government initiatives either do not succeed or deliver limited benefits (Heeks, 2001). E-government projects fail for a variety number of reasons related to management, stakeholders, technical problems, and environment barriers.

The literature has addressed the causes of e-government failure and has proposed solutions. Heeks (2003) concluded that the main reason of this failure is the gap between the current reality and the design of the future e-government systems. The failure causes of e-government projects are summarized as following: the contracts were rushed, the right requirements were not clear, end-users were not involved, and centralized management approach was adopted (Heeks, 2007). Eynon and Hicks (2006) suggested the following top-ten list of barriers to e-government in European Union (EU): "coordination across central, regional and local levels of government, resistance to change by government officials, lack of interoperability between IT systems, low levels of Internet use among certain groups, lack of political support for e-government, lack of standards for electronic identification across the EU, differences in administrative traditions and processes across the EU, lack of secure electronic identification and authentication, ICT skills among government officials, public concerns over potential for online theft and fraud" (p.6). Gil-García and Pardo (2005) classified e-government challenges to the following five categories: "(1) information and data, (2) IT, (3) organizational and managerial, (4) legal and regulatory, and (5) institutional and environmental" (p.4). In another research, Obi and Hai (2010) have classified the failure causes of e-government projects are shown in table 1.

When discussing the "end-user" category, researchers argue that user involvement is considered one of the key success factors of e-government systems (Sumner, 2003). Their contention is that significant stakeholders involvement from different e-government areas is necessary to utilize most of e-government services and transactions (Abie et al., 2004). Literature also discusses "e-government application" category, and one example is "interoperability". The literature main argument is that universal standards must be developed for different purposed ranging from tagging and storing information to selecting the software systems (Lenihan, 2002). The third category is "project organization"; research argues that the main duty of project organization is the

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implementation of the e-government; project organizers seek want to ensure the high quality of e-government application as well as persuading the stakeholders with the benefits of e-government project (Obi and Hai, 2010). The last category is "e-government environment", and "political support" is an example. The literature contention is that political support is important to e-government success because it shows the government commitment, and it can minimize the staff resistance (Bhatnagar, 2003).

From the aforementioned, we note that most of the literature does not explicitly state the importance of competence building. E-government competencies should be involved in the e-government initiatives (Rolland and Dingsøyr, 2009). The organizational competence that helps in offering excellent services to the citizens is an essential part of e-government context (Rolland and Dingsøyr, 2009). Identifying the organizational competencies (i.e. capabilities) is crucial to successfully complete e-government processes (Lee, 2010). We also found that variety of skills has been identified in literature but without considering the organizational competence. Leitner (2006) suggested three dimensions to the skills of e-government: management of organizational change, skills of employees, and effective leadership. Khan et al. (2010) proposed e-skill sets based on the development stage of e-government. They found that the number and the complexity of skills increase with the progress of e-government development. They conclude that not only technical skills but also non-technical skills are included in the e-services set. Wang and Hou (2010) classified the required skills for e-government success to: analytical, information management, technical, communication and presentation, and project management.

THE CONCEPT OF ORGANIZATIONAL COMPETENCE

Several competence researchers (Sanchez, 2004; Hafeez et al., 2002) have divided the legacy of competence research into three perspectives: resource-based theory, dynamic capabilities, and core competences. However, the three perspectives, share the same proposition; the firms, that want to achieve competitive advantage, must possess and control valuable, rare, inimitable, and non-substitutable (VRIN) resources.

Competence, which is developed from the resource-based view, can be defined as "a firm's capacity to deploy resources, usually in combination, using organizational processes, to affect a desired end" (Amit and Schoemaker, 1993, p. 35). When firm's resources possess special competencies (VRIN), these resources can lead to strategic advantage (Clemons, 1991). Also, the firm should have the ability to continually generate competitive advantage, and this ability depends mainly on the competence endowment (Teece et al., 1990).

Table 1: Categories of failure causes of E-Government projects			
	Category	Example	
1	End-users	Lack of user involvement	
2	E-government application	Lack of interoperability between IT systems	
3	Project organization	Coordination across central, regional and local levels of government	
4	E-government environment	Lack of political support for e-government	

Table 2: Perspectives of G4C project and their competencies				
Perspectives	Competencies	Does it include individual and know-how skills?	Does it include heedful interaction?	
Managerial	Strategic planning Leadership skills Project management Change management Human resource management Innovation skills Legal management Process management Process reengineering skills	Yes	Yes	
Technical	Technology management Information and knowledge management Technical skills	Yes	Yes	
Stakeholders	computer literacy communication skills interpersonal skills	Yes	Yes	

Since introducing IS to business processes leads to organizational change, the organization ability to be competitive in the market depends on the organization and coordination of its physical, human and organizational resources (Tsang, 2000). Thus, IS resources do not contribute directly to achieve the competitive advantage; IS resources form a part of complex resources and the interaction among those resources plays the role to achieve the competitive advantage. Resources, per se, do not create value rather organization ability (competence) that utilizes resources does create value. In another word, competitive advantage results from the organizational processes that are improved by the use of IS (Wade and Hulland, 2004).

Another point that is emphasized in literature is that the competence of strategic planning of IS (i.e. avoiding any mismatch between the strategic vision and the use of technology) is considered cornerstone ability in creating superior value (Peppard et al., 2000; Bakos and Treacy, 1986; Beath and Ives, 1986; Clemons and Row, 1991; Holland et al., 1992). Top management commitment and users involvement not only in the systems implementation but also in the planning stage are helpful in avoiding potential problems (i.e. resistance change) (Penrose, 1959; Pereira 1999).

Furthermore, competence can be viewed from two perspectives: individual competencies (Elkin, 1990; Woodruffe, 1991; Boyatzis, 1982) and organizational competencies (McGrath et al., 1995; Hamel and Heene, 1994). Individual competence refers to the individuals' skills that lead to an excellent performance in a job. Individual skills represent the required behavior to raise the task effectiveness (Burke and Litwin, 1992). Individual skills can be classified to technical IT skills, managerial IT skills, and business and general management skills (Caldeira and Ward, 2001). In their research, Mata et al. (1995) looked at 5 attributes, of IT, namely, customers switching costs, access to capital, proprietary technology, technical IT skills, and managerial IT skills. They concluded that only IT managerial skills could be source of competitive advantage because this type of skills involves complex social relationship among executives and IT managers. Thus, IT managerial skills usually develop in a long period of time through experience and learning. Also, because IT managerial skills are heterogeneously distributed across the firm, Mata et al. (1995) suggested that this type of skills is difficult to imitate. Organization competence is the result of understanding of both business processes and individual skills (McGrath et al., 1995). Organizational skills, such as project management, interpersonal, team management, and communication skills, include the necessary skills to effectively interact with the internal and external IS stakeholders (Lorenzi and Robert, 2003). Dhillon (2008) proposed a competence development process theory for harnessing IT. According to Dhillon's theory, organizational competence, which can lead to competitive advantage, can be achieved by having two crucial factors: individual and know-how skills, and purposeful heedful interaction as shown in figure 1. Dhillon (2008) suggested that developing organizational competencies could help the firms in not only gaining competitive advantage but also harnessing IT. The key competencies in having individual knowhow are to build organizational learning methods, to establish internal strategic alliance, and to create programs that raise the self-belief efficiency. The key competencies in coordinating the IT proficiency are to reduce the gap between the know-how and know that, and to apply the required behavioral changes that ensure the acceptance of the new technology. Based on the improved organizational capabilities, competencies that help in recognizing the IT benefits include: determining investment objectives and linking them to performance measures, identifying the stakeholders and make them accountable for achieving the objectives, and establishing the organizational change that is consistent with objectives achievement.

We argue that organizational competencies need to be developed in order to ensure success of e-government initiatives. The lack of understanding organizational competence for harnessing e-government initiatives leads to failure of such initiatives while



Figure 1: Organizational Competence Theory (Dhillon, 2008)

well understanding of organizational competence reduces the failure of e-government initiatives and ensures that e-government provides superior customer services. We check the validity of our argument by investigating the organizational competencies of the Korean G4C project.

Korean Government-For-Citizen (G4C)

The Korean G4C project began in 2002 as a "one-stop" project. G4C is designed to improve the public services that are provided to citizens by integrating high-tech information technology with government services to minimize the number of physical visits to the public offices and reduce the required paper work. "The G4C project was created to increase Korea's competitiveness capability in government service provision" (Ministry of Public Administration and Security, 2009, p.9). G4C ranked number one in United Nations E-Government Survey 2010 (UN, 2010), and it is considered one of the most successful and advanced e-government service systems.

The exploring of G4C's competencies is based on the analysis of the project description, and implementation document that is published by the Ministry of Public Administration and Security (2009). The document (Ministry of Public Administration and Security, 2009) describes the G4C system before and after implementation from 2000 to 2009.

Because e-government consist of many interrelated socio-technical factors, many researchers (Wang and Hou, 2010; Alshawy and Alalwany, 2009; Eschenfelder and Miller, 2005; Carter and Belanger, 2004) divided e-government projects to several segments in order to facilitate managing and understanding different e-government perspectives that provide the competence. Consistent with previous research, we also divide the G4C case into the following perspectives: management, technical, and stakeholders.

First, the document indicates that there is a long-term information strategic plan (ISP) to accomplish that project. The ISP is set to advance the G4C system to provide superior value customer-oriented services. The ISP indicates that receiving government services will be diversified by providing administrative services, voice-based services, and mobile-based services. A strong government commitment to develop, implements, and maintain the project since the early phases of G4C system is shown in the G4C project. For example, the document indicates that "aggressive government support for creating a high-speed communication network has also resulted in one of the most wired nations in the world, with 35 million Internet users in the nation today, including over 15 million high-speed Internet subscribers" (p.9). Also, the government reformed and reorganized relevant regulations and laws in order to have an efficient e-government project. In addition to accepting certified electronic signature, the system accepts legal forms and certifications to accomplish several services. Innovation is required in managing G4C project to create e-government functions. Thus, Government Innovation Committee (GIC), which consists of consulting committee and technical advisory committee, is created to develop and improve the provided services. For instance, the GIC makes "a plan to include the authorization of electronic documents for 775 regulations governing government services" (p.50). The document also depicts the team's organizational structure. Three teams, which are control, systems development, and regulator reform teams, are headed by senior level heads of information management teams from the Ministry of Government Administration and Home Affairs.

The output of G4C processes includes e-services (i.e. receiving national identification registry certificates), e-management (i.e. creating electronic official document management system for civil petition), and e-commerce (i.e. fees payment). G4C promotes process reform in the e-government processes. For instance, the following has been accomplished while implementing the G4C project:

- "A process of elimination and/or combination of services that have little legal foundation, or are almost never requested by citizens"
- "Discover and eliminate services that require a complex process or are rarely used"
- "Discover methods for improving a variety of service processes and procedures i.e. personal services".
- "Discover methods for increasing the efficiency of government administrative organizations. i.e. improve fee structures".
- "Standardize and simplify procedures for requesting and receiving government services i.e. expand services that can be received by phone or fax" (pp.17-18).

This part of the document shows that G4C project has individual skills (i.e individual managerial skills) as well as the interaction skills (i.e. the required managerial interaction to achieve objectives). We group these competences under the managerial perspective and we summarize the following:

First Perspective: managerial competencies are crucial to the success of G4C project.

Second, the capabilities of IT infrastructure play a major role in the success of G4C project. The hardware and software assets of G4C project were strengthened to be able handle the system services. G4C creates an integrated government service portal. The system allows 97 government organizations to use the system and share information. G4C is linked with 54 systems including Hometax.go.kr (tax service), Unipass.co.kr (customs), for example. The system promotes an administrative cooperation between cities and provinces by utilizing the "Saeol" database. At the same time, the system is linked to the process management system, document distribution system, and the city, provincial and district administrative systems that create an online document delivery system.

The G4C system is also competent to provide accessibility and security. For example, "services with complex procedures are grouped into steps that can easily be understood by the user" (p.10). The regulations and laws pertaining to the service being sought can be accessed easily. The system applies one-time passwords to protect the users' personal information. Furthermore, the foundation of the system can be expanded to include new devices other that PCs. For example, the current scope of the services can by expanded to include mobile devices (i.e. PDAs, mobile phone), and television sets (cable TV, IPTV).

These competencies can be grouped under the 'technical perspective'. It includes know-how of achieving these competencies, and the interaction of the technical competencies with the process and managerial aspects. Therefore, we classify these competences under the technical perspective and we summarize the following:

Second perspective: technical competencies are crucial to the success of G4C project

Finally, e-government systems are designed to deal with different stakeholders such as employees, citizens, business, and other government organizations. The G4C project is citizen-oriented project; one of its goals is to "reorganize the administrative service processing standardization table to facilitate understanding, and develop customer-oriented service regimes" (p.19). First, the citizens should be aware of the available services that are provided. Public education campaign is performed to raise the citizens' awareness. The G4C is promoted through various media during times of heavy usage such as the year-end tax season. Both the project as well as the stakeholder should be able to communicate and should have the communication skills. "Another goal of the system was to enable the public to utilize government services without having to physically visit offices, and create a two-way communication system that allows individuals to voice their opinions on government policies and programs." (p.38).

Thus, the citizens should have the ability to deal with the system without problem. In addition, the system designed to promote the online usage and accessibility as indicated in the second perspective. Internal users should also be trained to use the system. To ensure this competence, "a training program was carried out in 16 city, provincial and government offices around the country; a total of 5,736 civil servants and workers were trained during the program during the two trial operation phases, with an additional 8,357 trained during the evaluation period itself" (p.52). Thus, We group these competences under the stakeholders' perspective and we summarize the following:

Third perspective: stakeholders' competence is crucial to the success of G4C project.

Although analyzing the organizational competence from Dhillon's theory is useful, we conclude that the competence of e-government projects needs to be analyzed from an additional point of view. The competencies of each one of the four G4C categories consist of individual skills and/or know-how, and purposeful heedful interaction as shown from the analysis of G4C case. The managerial competencies, for example, include the individual managerial skills (i.e. change management skills) and project management skills). These managerial skills are necessary to manage the technical, and stakeholders' perspectives. The technical competencies include the know-how aspects in addition to the interaction among the managerial, and stakeholders perspectives. Figure 2 shows the direct relationship between the e-government perspectives and the organizational competence theory.

DISCUSSION, CONTRIBUTION, AND LIMITATION

Although the literature has reported several e-government competence studies (Leitner, 2006; Khan et al., 2010; Wang and Hou, 2010; Lee, 2010), several shortcomings still exist in the previous work. First, the current studies do not integrate the e-government competence with the competence theory. Such integration (i.e. skill and know-how, interaction) is essential to understand the major components of e-government competence. Second, the current studies do not investigate the competence elements from the socio-technical perspectives (i.e. management, technical, stakeholders). Investigating the e-government competence from the socio-technical perspectives is important to facilitate the e-government management (Robey and Holmström 2001), the





Figure 2: Organizational Competence Theory and E-Government Perspectives

determination of the missing competence of e-government, and ultimately providing the superior services. Thus, the objective of this paper is to propose a study that remedies the aforementioned drawbacks.

This study contributes to the body of knowledge conceptually and empirically. The theoretical contribution is the novel integration of e-government literature and competence theory, which facilitate understanding the e-government competence from the socio-technical perspective as well as from the individual skills and interaction perspective. As a practical implication of the suggested integration in figure 2, the integration informs the director of e-government project that the employees of each perspective need individual skills and interaction skills (i.e. a managers need managerial skills and managerial interaction skills, technician need technical skills and interaction skills) to ensure that everyone understands each other's jargon. Determining the individual skills and the interaction skills of each perspective is important message that needs to be considered while training the current employees and hiring new prospective. Also, the suggested integration tells that different stakeholders (i.e. citizens, businesses, governments) should have individual skills (i.e. computer literacy) as well as interaction skills. The competencies of stakeholders are important to consider while designing the media awareness and education campaigns.

However, this study is not without limitation. The analysis and the conclusion are based on the analysis of G4C case study, which is a government document that describes the Korean e-government project. The purpose of G4C document is descriptive in nature, and it is published to give descriptive information about the G4C project. Real-world data collection should be performed for this particular research and that is what we plan to accomplish in future research.

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