E-GOVERNMENT SYSTEM IN WIKINOMICS: STAKEHOLDERS AND CONFLICT

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ABSTRACT

Despite the importance of how information and communication technology (ICT) contributes to public organizational performance is to researchers, managers, and policy makers, there is uncertainty and debate about the e-government (e-Gov) differing from traditional public management information systems (PMIS). In the meantime, the roar of collaborative culture already changes everything. The new world of wikinomics, which is based on four powerful new ideas: openness, peering, sharing, and acting globally is replacing some of the old tenants of business. Our research mainly focuses on several different theories, including transaction cost, barging power, and coordination in developing a new perspective to explain the e-Gov system development in the wikinomic world, and to provide a solution. It is important to understand these complex issues that underlie successful implementations and integrations of the e-Gov. It also explicates the nature of conflict in the design of information system and the reasons why stakeholders resist the systems. We apply the perspective to synthesize what is known about government value and clarify the supposed uncertainty about the relationship between the e-Gov and the traditional public management information systems. Our analysis also facilitates knowledge accumulation and creating concerning the governmental performance impact of ICTs.

Keywords: E-Government (E-Gov), Coordination, Wikinomics, Prosumers, Transaction Cost

INTRODUCTION

As the Information and Communication Technologies (ICTs) become more readily available to everyone, a radical change is also springing up due to the speed and efficiency of the connection amongst organizations and individuals. Governments around the world have been engaging in deploying the ICTs for several decades to increase the efficiency and effectiveness of their functioning. Meanwhile, the promise of the e-government (e-Gov) enables most public organizations of countries to be willing to use substantial resources to create the infrastructure and environment for promoting services delivery systems electronically with their citizens. However, new business models of the e-business emerge from within the Internet age. There are many benefits of customer-focused e-Gov. The e-Gov can be considered as a paradigm shift away from traditional approach and should focus not only as an operational viewpoint but also as a service viewpoint [11]. The business model redefinition is the most radical idea of the e-Gov [25][20]. The e-Gov is understood as the use of the ICTs to promote more efficiency and cost-effectiveness, facilitate more convenient services, and make governments more accountable to citizens. Compared with the narrow focus on using the ICTs, others view the e-Gov as a board-based effort to transform government and governance [11]. The e-Gov vision should begin with a national strategy to create a common platform, not only to help citizens solve problems but to service businesses. And there is perhaps need a further category, which allows for complexity of mission of the e-Gov to be defined and identified separately [5].

In order to promote the e-Gov, researchers and practitioners develop frameworks to provide a schematic description of the e-Gov system, theory, and phenomenon. A generally accepted e-Gov framework is centered on critical dynamics between different bodies within the society [32]. These bodies include the government, citizens, and businesses. Analogous to the concept of the e-commerce, the e-Gov aims to make the interaction between government and citizens (G2C), government and business (G2B), and inter-agency dealing (G2G). The government information systems based on this e-business model creates a new relationship amongst stakeholders in the same governing networks. The role of customer relationship management plays a core proposition for government as other stakeholders shifting their roles to customers. The "government" sector functions both as an "initiator" and a "reactor", which continuously engages in two-way information interactions with others.

There is much more that the e-Gov can do to embrace the ICTs today aside from using the Internet to share information, enabling online transactions, and servicing or progressing towards integration. Layne and Lee [19] developed four stages of a growth

model for the e-Gov to explain in terms of complexity involved and different levels of integration. These stages outline the multi-perspective transformation within the government structures and functions as they make transitions to the e-Gov through each stage. They believed the full potential of information technology, from the citizens' perspective, could only be achieved by horizontally integrating government services across different functional walls and the value to citizen can be delivered. A longitudinal look at e-Gov may benefit by proving the continuing growth trend [4]. As the technological and organizational complexity in this stage is also higher than others stages, results in electronic delivery of services where more than one department may be involved in processing a request or services. The models with public-private partnerships must be offered [3], then the real one-stop shopping for customers included a multi-perspective of the e-Gov including G2B, G2C and G2G could be successful functioning. However, the wikinomics phenomenon is a new variance in here.

Although the stages model can identify the complexity and appraise the availability of public services online, the more meaningful measurement used for ranking the world's leading countries and benchmarking their performances was also proposed [10]. The change of the stakeholders' roles let the customer relationship management plays a core proposition for e-Gov [15]. Interestingly, the leader in e-commerce is not in the lead too when it comes to e-Gov. One reason may be the nature difference between public and private sector [27]. E-Gov management emphasizes the organizational transformation through sharing and coordinating to create a cooperative advantage rather than a competition advantage. Another reason may be the indicators were focus on the observable, searchable, testable items and main relevant for G2C and G2B. The complexity of public sector mission was borne out by the 20 target services chosen by the European Commission for e-delivery [5] is a good example.

The shortage of benchmarking about integrated service also can be found whether it is in an academic e-Gov survey [9] or the governmental report [21]. Because the wikinomics phenomenon will strengthen the collaboration, it's easy to understand that those dimensions in collaboration are not only hard to measure, but also ambiguous to make connection with the performance of the e-Gov.

WIKINOMICS AS THE IMPETUS

A new collaboration so called "wikinomics" is emerging, which is not just about creating online encyclopedias and other documents. A wiki is more than just software for enabling multiple people to edit Web sites. It is a metaphor for a new era of collaboration and participation [31]. As the consumer actually co-innovates and co-produces the products they consume, we'd assume it would be a win-win situation. However, the mass collaboration in the e-Gov represents not only embracing consumer power and losing control, but also changing the internal systems and procedure that involve sharing information and conducting electronic transactions within governments from the backbone of public organization. This includes both intra and inter-agency interaction among employees, departments, agencies, ministries and even other governments. Collaboration as main activities in the horizontal or vertical integration, that is, government-to-government (G2G), government-to-employees (G2E) and the internal effectiveness and efficiency (IEE) have remained grossly understudied. Research concerned with nature and extent of organizational transformation through e-Gov needs to expand into those dimensions of G2G, IEE, and G2E to reduce possible suffering from the iceberg phenomenon [29]. And the e-Gov business process management does not only serve the purposeful reorganization of administrative expirations, but simultaneously transports processes of organizational learning in the sense of governance. A Formation of stakeholders'
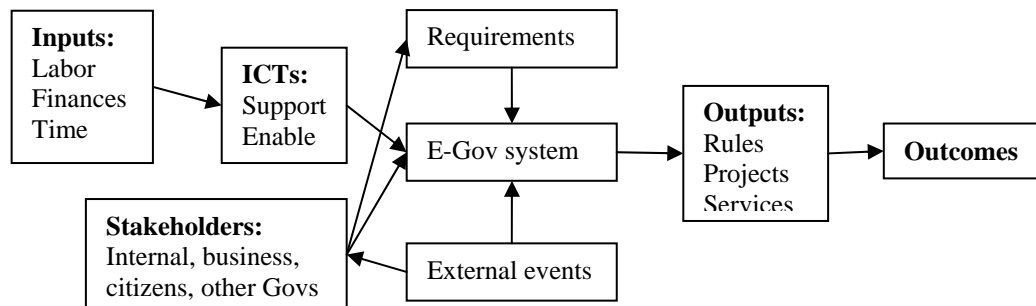

Figure 1. Stakeholders' relationship in e-Gov

relationship in e-Gov redefines, as shown in figure 1. The wikinomics is based on four powerful new ideas: openness, peering, sharing, and acting globally, and these new principles are replacing some of the old tenets of business [31]. Here is a brief introduction of these ideas and we try to extend to the e-Gov:

1. *Being Open*. In the private sector, a growing number of smart companies are learning that openness is a force for growth and competiveness. In the public sector, stakeholders' requirements will affect the outputs only; outcomes should depend on inputs and external events. The next step for both is to start a planning process with a comprehensive map of own innovation ecosystem.
2. *Peering*. Any company seeking to open source a product or participate in peer-production communities must devise control points and collaborative processes for weeding out poor contributions and assembling end product. Same situation will occur in the e-Gov. Electronic rulemaking, for example, is a bridge form providing information to the public to citizen to government commentary, and potentially citizen to citizen discourse, in the development of agency rules [30].
3. *Sharing*. The increased willingness of countless individuals and organizations to share is giving rise to powerful new economies of sharing and a rich legacy of public goods on the Web. The supply chain system in the e-business is a well-known paragon. Compared to private sector, the public officials are often willing to share the most intimate details of the systems of which they are most proud. Governments are much more interested in technology transfer than are business.
4. *Acting Globally*. Becoming a truly global enterprise means abandoning the view that outsourcing is just a way to off-load costs. Outsourcing a increasingly used method to gain speed, innovation, and knowledge. However, public sectors need to take a long-term strategic approach to managing ICTs outsourcing arrangements. ICTs outsourcing should be considered a managed relationship rather than a traditional procurement [8].

There are still many interesting issues in wikinomic. Nevertheless, the differences between the e-Gov and private e-systems have already changed but have not yet disappeared. However, we try to stop here and start focusing on several different theories to develop a new perspective to explain the e-Gov system development in the wikinomic and to provide a solution. Before that, a case will be introduced first.

CASE STUDY AND ANALYSIS

In 2001, the nonprofit Council for Excellence in Government published E-Gov: The Next American Revolution, a vision of what full electronic government in America could accomplish and a blueprint of how to get there. The blueprint advanced proposals on four other fronts: broad public/private collaboration to reach full e-Gov; a skilled workforce to implement it; innovative solutions to questions of privacy and security; and public access and education However, the case in U.S. counties revealed the adoption of e-government portals was highly associated with certain social and economic factors [16]. Meanwhile, the government of Canada is leveraging the potential of the ICTs to offer Canadians user-centered, integrated services when and where they want, no matter how they choose to access them. The e-readiness status provides a good environment for e-Gov development in Taiwan. As of September 2006, the number of Internet population reached to 15.4 million. The population of broadband users is 12.3 million. To promote the widespread development of ICT applications, the government launched the e-Gov action plan and program, which highlighted the focus on Internet application development and relevant infrastructure establishment in government. From 2003 to 2007, the government allots yearly funds of US$85 million for the implementation of the e-Gov environment.

The National Health Insurance (NHI) program in Taiwan, administered by the Bureau of National Health Insurance (BNHI), was launched in 1995. As a single payer, the BNHI is a good case not only because the e-Gov practices at each stage are sufficient but the stakeholder's relationship is complete. The NHI of Taiwan covers 23 million people with annual outlay of some 13.5 billion U.S. Dollars. One key factor to the success of the program is the adoption of information system from its inception. The BNHI had made a policy to replace the paper-based NHI certificate cards by Integrated Circuit (IC) cards. The first NHI IC card was issued in 2002 and BNHI finished the whole replacement until 2004 even there are many arguments such as the security and privacy issues. Contents in this card include both personal information and medical records, but there is not all available in the beginning. However, for building an online environment promotion of e-medical care services, BNHI decided to enforce this new technology and asked health

providers to support by filling in the medical care information including diagnosis and treatment from 2006. The further step of BNHI will plan to accomplish the horizontal integration with the Department of Health (DOH) of Taiwan just announced project of the National Health Information Infrastructure (NHII). From the stakeholders' viewpoint, there are several important ICTs activities running under the e-Gov. First, as a powerful strategic planning tool in the BNHI, the issues management system deals with their critics from external events. There is a wiki-style e-Gov for internal users to use. Second, the outsourcing blog mainly focuses on external customers, collecting the option from Internet. Last, a knowledge-based system for different stakeholders helps build up the whole map for e-Gov integration. The concept of core e-Gov services developing in the BNHI is shown in Figure 2.

Figure 2. Core e-Gov services in BNHI

Public agencies already use their strategic systems for the purpose of cooperative advantage [1]. E-business gave that e-Gov services extend across different organizational boundaries and heterogeneous infrastructures; there is a critical need to manage the knowledge and information resources stored in these disparate systems [13]. Inter-organizational systems (IOSs) such as the IC cards program planned and managed ventures to develop and use ICT-based and/or human-based information exchange systems to support collaboration and strategic alliance between otherwise independent actors [17]. Kumar and Dissel Summarizes some of the influences on the formation of cooperative alliances. To analyze BNHI collaboration, we apply the transaction cost and coordination theory [22][23], which suggest that dependencies among activities and resources create coordination problems that constrain how the

activities can be performed. To avoid or overcome these constraints, additional work must be performed in the form of coordination mechanisms that manages the dependencies in e-Gov. Issues management system in the BNHI will be the most important ICTs to explore several ways to sufficiently quantify and control those factors (the reputation-reality gap, changing beliefs and expectations, and weak internal coordination) [26].

Literature with a technical view on the IOSs started in the 1980s. Cash and Konsynski [6] gave a simple but useful definition of an IOS as "an automated information system shared by two or more companies." They consider the system useful for the participants to promote their productivity, flexibility and competitiveness. Johnston and Vitale [14] later enhanced it as "an IOS built around computer and communication technology, and facilitates the creation, storage, transformation and transmission of information". Actually, IOSs are ICT-based systems that transcend legal enterprise boundaries [17]. Bakos [2] mentioned that three characteristics are associated with IOSs. First, it decreases the costs of exchanging and acquiring information by participating firms. Second, the benefits for the IOSs innovator increase as the number of firms joining the network increases. Third, considerable switching costs occur when a firm shifts from one IOS to another. Outsourcing blog will be a very suitable tool.

Traditional perspectives are inadequate for prospecting and building a customer-driven, service oriented e-Gov; the IOSs perspective will benefit the analysis. In fact, the essential characteristics of the e-Gov in BNHI are multifaceted, after the technical-economic and socio-political perspective, the trust and relationship perspective was also mentioned [18]. Considerable efforts should be taken to understand and in analyzing the socio-cultural factors that affect the e-Gov. For this reason, there is a change in the role of ICT – changing from a source of competition to that of a source of cooperation among businesses [12]. ICT is now used as a source of cooperation rather than that of competition among public organizations. Knowledge-base system in BNHI became a key factor to well integrate the IC cards program within stakeholders. Because the participants in IOS not only include suppliers, customers, dealers but also competitors [14][12], it is necessary to view IOSs in a broader context, as IOSs can be considered as a well planned and effectively managed cooperative ventures among otherwise independent agents [17]. However, as an IOS is changed from a competition-based role to a collaboration-based role, except competitive

advantage, the amount of trust or conflict management issues in the system will also increase. This means the barging power amongst different stakeholders will play an important role to formalize the e-Gov services. However, the e-Gov in BNHI has a preliminary success not only because collaboration on stakeholders but collaboration on the ICTs (see Figure 3).
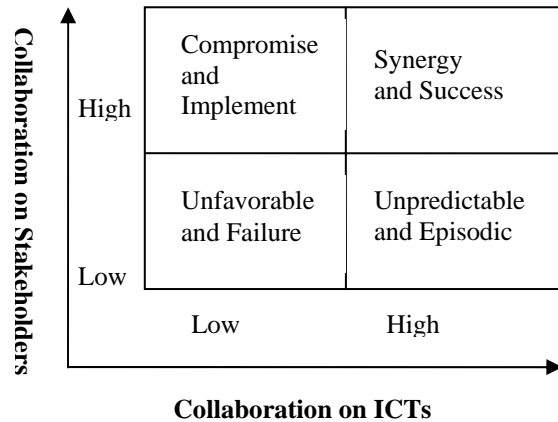

Figure 3. Collaboration grid for the e-Gov

Following the case and analysis, the combination performance in the e-Gov was introduced. The result could be transformed into the coordination gird to help to identify the governmental position of the e-Gov.

RESEARCH AND MANAGERIAL IMPLICATION

The goal when developing the case and analysis was to characterize and identify the different direction and dimensions of the different e-Gov approaches, and that could be used to categorize, classify and compare the e-Gov's visions, strategic agendas and application initiatives. Furthermore, the analysis provide criteria that should act as a lens to focus attention and awareness on underlying issues and element that could be debated, discussed and further developed. Meanwhile, there are several research and managerial implication need to be discussed.

The E-Gov Diffusion and Maintenance

There is several improvement and impediments should be noticed to prevent the conflict.
1. Improvement Focus on Transaction cost
2. Improvement Focus on Efficiency
3. Improvement Focus on Information Sharing
4. Impediments in Information Intensity
5. Impediments in Complexity

6. Impediments in Incompatibility

Consequences impact on Governments, organizations, individuals should have a sustainable monitor in the e-Gov diffusion and maintenance stage. Of course, staying the same for a complex social system is not as simple as it sounds. Complex systems theorists attempt to explain the continuity of identify via the process of self-referencing. Although self-referencing processes seek continuity for the existing state of the system and the existing boundaries of the system [28], barging power and transaction cost in knowledge-base wikinomics still play very important roles. Trust as a third rationality of information systems [18] also impacts the e-Gov's collaboration. However, there are a trade-off between barging power and trust.

Identify the Stakeholders' Relationships by Resource Dependency

The resource-based view argues that firms possess resources, a subset of which enables them to achieve competitive advantage, and a subset of those that lead to superior long-term performance. This perspective is quite different from the marketing perspective. Resources that are valuable and rare can lead to the creation of competitive advantage. That advantage can be sustained over longer time periods to the extent that the firm is able to protect against resource imitation, transfer, or substitution. In general, empirical studies using the theory have strongly supported the resource-based view. Resource dependency characterizes the links among organizations as a set of power relations based on exchanged resources. Resource dependency proposes that actors lacking in essential resources will seek to establish the stakeholders' relationships with others in order to obtain needed resources. Also, public sectors attempt to alter their dependence relationships by minimizing their own dependence or by increasing the dependence of other public sectors on them. Within this perspective, governments are viewed as coalitions alerting their structure and patterns of behavior to acquire and maintain needed external resources. Acquiring the external resources needed by a public sector comes by decreasing the governmental dependence on others and/or by increasing other's dependency on it, that is, modifying a governmental power with other public sectors. Different from the public sector, the key resources are usually non-tradable, immobility, imperfect substitutability and imperfect immutability in private sectors. However, the citizen in the e-Gov is at the center of the vision, but other key stakeholders are also considered [15]. Embracing all stakeholders may be not an easy job. Outline a

consistent and transparent process that can be understood by all stakeholders is necessary and collaboration with the private sector is as stated goal.

Communication in Wikinomics

Blogging is a bidirectional channel. Government could use it to build not only a friendship network but an issue network. Organizations must analyze the different types of blogs as well as the potential benefits provides by each. A failure to engage the blogging community is the largest potential negative impact for the governments. However, as official corporate blogs, careful handling of the outsourcing blog to avoid becoming a "flog" is necessary. Even with the risks of use or risks of existence, wikinomics already happens. In economics and related disciplines, a transaction cost is a cost incurred in making an economic exchange. A number of different kinds of transaction costs exist and are already discussed by numerous researches. The whole e-Gov must be completed under wikinomics to drive down cost. Social exchange is a social psychological and sociological perspective that explains social change and stability as a process of negotiated exchanges between parties. Social exchange posits that all human relationships are formed by the use of a subjective cost-benefit analysis and the comparison of alternatives. However, trust has a direct influence on behavioral intention to share information or other resources. Some e-Govs such as e-Tax's stakeholders will communicate each other seldom because the collaboration need is quite low. In the collaboration perspective, manager should focus on transaction cost because public sector organizations will be willing to share information than private sector organizations. Even both social exchange and trust-based issues are important.

The e-Gov service and economic competitiveness will be relatively high [33] as the e-Gov does not collaborate well. By comparing counties' e-Gov practices with the established the e-Gov growth model, the local e-Gov practice is still at a low level in U.S. There is great potential for local governments to improve their services, especially in two-way communication and executable transaction aspects [16]. Although private information systems are designed with primarily emphasis on competition whereas public sector managers are structured primarily around accountability, openness, and equity issues [27], there may not be more important to distinguish the differences between the public and the private in the wikinomics. As the private sector organizations tend to understand their customers not merely in terms of what those customers buy but a whole holds and uses information on virtually every aspect of people's lives.

Culture Issue

People are deeply influenced by the cultural values and norms they hold. Many researchers have classified cultures around the world in various categories. The most typical category is western and oriental culture [24]. It is not surprising if the oriental nations are willing to implement the e-Gov may not only due to service but control. In the meantime, a proper policy framework is also of paramount importance in this context. Many governmental units across the world have embraced the digital revolution and placed a wide range of materials on the web, from publications to databases to actual government services online for the use of citizens. In order to ensure success, it is important to assess the architecture of the e-Gov and take necessary actions based on these assessments. The top queries and seasonal effect analysis reveal the information needs of the general public on government web sites [7]. However, they will be changed because the culture issue.

E-Gov Performance Issues

The E-Gov's role in increasing efficiency has been addressed in many researches. As the e-Gov can provide support for more efficient and more effective decision-making in wikinomic, they can create new information flows that collaborate among different stakeholders. The e-Gov can also create new accountability information and deliver accountability information to new recipients, providing for more efficient or effective accountability. Furthermore, the e-Gov can create new performance information and deliver it to decision makers, providing more effective managerial control over government resources. Finally, the e-Gov can supply the new information necessary for the establishment of market relations, and also form the conduit for delivery of new forms of public service. Traditionally, the public sector is not stingy on ICTs' investment. However, the cost benefit in the e-Gov is hard to measure not only because the performance is not equal the profit but the measurement must contain the G2C, G2B, G2G and G2E relatively. The e-Gov performance framework according the above analysis and discussion, figure 1 could be redrawn, shown as figure 4. Be careful in the performance evaluation because the stakeholders' cognition may be quite different.
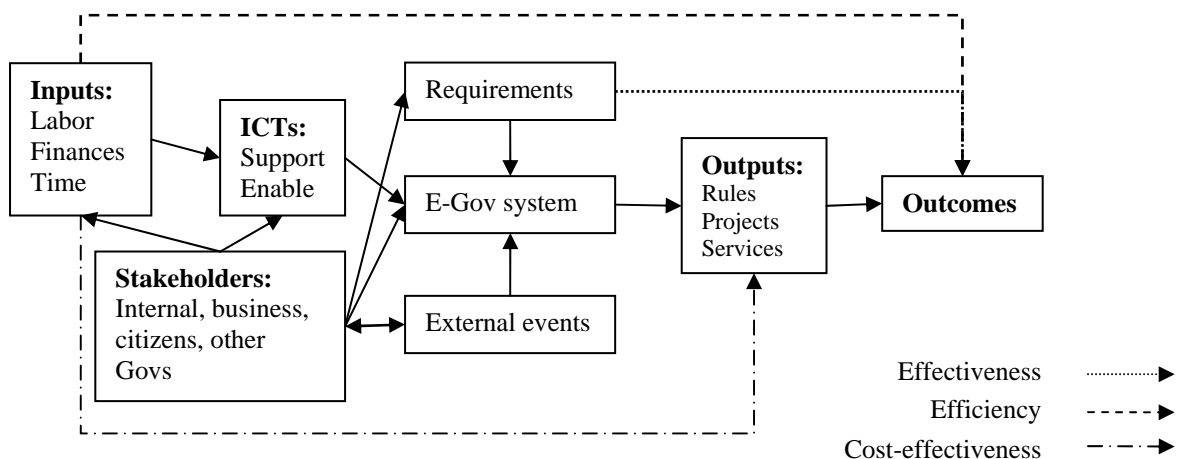
Figure 4. E-Gov performance framework

CONCLUSIONS

In the Internet era, providing customers with better service to attract and retain customers and building a long-term relationship with customers is the key to success. Government can be considered as a special service industry. The perspective of collaboration will be helpful to assessment and benchmarking the performance of the e-Gov. The focus on coordination is the most important issue not because the goal of horizontally integrating services, but the reciprocal interdependency [17] Networked IOSs among public sector organizations are low structure, technologically intensive and has potential for conflicts. The structure and use of technology is likely to differ from other type of e-Govs. And the difference when apply the IOSs between private and public is that private organization are focus more on customers than active participant.

Meanwhile, there are many research issues that need to be identified and addressed such as the knowledge sharing or risk sharing, partial goal conflict among participants, efficiency as the effectiveness criterion, and information asymmetry between principal and agent. Even the most comprehensive model cannot include all dimensions and aspects of the e-Gov. In the BNHI case, cost-effectiveness is dependent as well as on efficacy and security. Compared with transaction cost, the barging power is a more important variance in e-Gov. However, the idea behind wikis is to make easy to write and read. Wikinomics can improve collaborative work and knowledge sharing. There are key benefits that bode well for their adoption: low complexity for users, low centralized control by IT, and high value for

corporate knowledge. Developing the performance framework is useful because different cases can be well illustrated. But this is only the initial step. More research and practices involve more cumulate evidence of impacts and effects of the e-Gov on individuals, groups, communities and populations will contribute the wikinomics paradigm shift.

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