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**Adoption of Electronic Government: A Process Paradigm Perspective**

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**Abstract:** The concept of Electronic Government (EG) has evolved significantly during the past few decades. Several development models have been presented to illustrate the advancement and adoption of EG practices. The recent developments in the EG adoption which emphasizes the process view of the EG calls for a new perspective to EG adoption. Based on the review of most cited stage models of EG adoption a comprehensive stage model is recommended. This paper utilizes the proposed six-stage model and recommends a process based framework for analyzing the EG adoption. Furthermore, the stages of EG adoption are described from the process development perspective.

## **1. Background**

When the military first implemented the internet in the 1960s, their intention was to provide communication networks for defense research purposes; they did not envision how the internet would transform society within 30 years (Ho, 2002). Since the introduction of the internet, there has been a rapid growth in its use as a communication tool. The exponential growth in internet usage and the swift expansion of e-commerce in the private sector have both led to pressure on governments to serve their citizens through electronic media, as characterized by the new term Electronic Government (EG) (Ho, 2002; Holden, Norris and Fletcher, 2003).

The private sector developed the concept of e-commerce, which enables customers to access products and services through a “one-stop shop”. While customer convenience is a contributory factor in the private sector’s use of Information and Communication Technologies (ICT), the prospective cost savings provide strong motivation for companies to invest in e-commerce. The internet not only changed the way people interact and how information is delivered, but it also pressured governments to revisit its service delivery models and methods to citizens (Cohen and Eimicke, 2002). The private sector shares the same stakeholder base as the public sector, and it is these stakeholders who contribute the most in increasing pressure on governments to hasten their adoption and diffusion of ICT (Donaldson, 1995; Geroski, 2000). ICT diffusion refers to the gradual adoption of the technology by different groups of stakeholders. The internet is becoming more important not just in economic development, but also in organizational development. The internet, like other communication technologies, has wide political impact on organizations, their stakeholders, and the relations among them (Milner, 2006).

Several scholars have called for the need to examine and understand the process of adoption of innovative technologies in governments. The importance of understanding the adoption process becomes more vital when the context is an exceptionally complex environment like the government. The adoption rate of technology depends on the political climate in the government, and on the inclination of those in power (Milner, 2006). Some institutions would allow governments and ruling elites to embrace new technologies – if they yearn to do so – while other institutions would enable them to delay or disrupt their adoption entirely. Despite these considerations, governments around the world, especially among the developed countries, have already established ambitious goals for the implementation of EG in the public sector (Aichholzer, 2004). These governments undertake such transformations in the public sector because they understand that quality and the cost of public service will ultimately determine their respective populations' overall quality of life, the strength of business activities, and their own political legitimacy (Aichholzer, 2004). Though this paper recognizes that the implementation of technology involves complex planning and challenging factors such as fundamentals in public policy, regulations and financial constraints (Jaeger and Thomson, 2003), we do not advocate for specific implementation measures. Instead, we provide an analytic overview of the EG adoption process.

We now turn to this overview for the remainder of this paper. Section 2 introduces the developments in the concept of EG, and describes the importance of EG development from the public management perspective. Section 3, offers evidence of the shift to the process view of EG adoption. In Section 4, we explain our recommendation for a comprehensive stage model of EG adoption, and then apply our model to the process view of the EG development framework. Section 5 describes in explicit terms the process view of EG, and, finally, the synthesis of the paper is presented in Section 6.

## **2. Developments in Electronic Government: Public Management View**

EG has developed significantly in the recent decades as governments began to recognize its role in improving service delivery to citizens (United Nations EG Survey, 5); these developments progressed in parallel with technological advancements. The introduction of EG in the public sector benefited from lessons learned from the private sector, notably the notions that government services must be more citizen-centric and service oriented (Seifert and Chung, 2009). Every concept in usage, either in the public sector or in private sector, builds on its precedents, and, we contend, incrementally within the process development frameworks.

It is generally accepted in academia that government departments are becoming more collaborative. They broke away from traditional methods of service delivery, and have acted independently when directing service delivery (McGuire, 2006). These developments have paved the way for the implementation of New Public Management (NPM) designs. Within NPM, these departments gradually began to implement a system of service delivery reflecting feedback from citizens, and often characterized as 'citizen centered' service delivery models. NPM is an unintended consequence of the internet revolution that resulted in a shift in approach to citizens (Marche and McNiven, 2003). We will argue that this new design is consistent with that notion and can be described from the perspective of the process view of EG adoption.

### **2.1 Importance of Electronic Government: Development in the Public Sector**

To provide a clear analysis and explanation of the causes for the change in government service delivery mechanisms that enabled it to incorporate new technologies, we will argue that this incorporation is driven by paradigm shifts in public administration. Since the late 1990s,

government functions and service delivery methods have evolved rapidly, where Devadoss, Pan and Huang (2002) reasoned that such transformation results from the impact of technological advances that in turn enabled governments to deliver services via the internet. Arguably, the advancements of technology can also be attributed to the adoption of NPM in the public sector. NPM is founded on the themes of desegregation, competition, performance, and a reward system, all of which imply a move away from traditional practices of public administration toward a transparent and results-oriented form of government (Dunleavy et al, 2005). The implementations of delivery services are directed and supported by efficient and effective public managers (Noordhoek and Saner, 2005). NPM is premised upon the public perception that government is too unresponsive, inefficient and monopolistic (O'Flynn, 2007). This is a reflection of criticisms from the 1970s of the traditional approach, among many, for functional insularity, the inability to measure performances and react to changing circumstances, along with preventing managers from making independent decisions, which in turn contributes to inefficiency (Navarra and Cornford, 2005; Marche and McNiven, 2003). However, according to Hernes (2005) NPM is defined as a set of ideas and methods, of which the goal is to combine accountability and efficiency in public administration but also underscore the inherent tensions between logistics of service and accountability from an organizational structure perspective (Hernes, 2005).

While the NPM framework is being implemented across western nations, it has rarely been the subject of critique or subsequent evaluations. One reason may be that public servants may be not supporting the good order and delivery of services. Members of Parliament (as observers on behalf of citizens) do not show interest in this domain either as they may be perceived by citizens to be in control (Noordhoek and Saner, 2005). Even though not everyone fully understands NPM principles, it is generally recognized that they are the driving force behind the changes in

government administration. However, instead of embracing the principles brought forward by NPM, some people greeted them with cynicism and disbelief (Noordhoek and Saner, 2005). Noordhoek and Saner (2005) argues that this is the case the examples of Switzerland and the Netherlands; both have the knowledge and capital to fully embrace NPM, yet the principles of NPM evoked a reaction jaded by distaste for a too rational and non-political approach towards people and organizations. In 2004, the region of Zurich voted to halt all NPM-related administrative reforms and in the Netherlands, the cabinet and Parliament favored a report that called for the end of the independent status of arms-length agencies, a pivotal element of NPM (Noordhoek and Saner, 2005). Noordhoek and Saner (2005) argue that these are examples of decline in NPM. However, the authors of this paper neither agree nor disagree with that argument given that countries such as Australia and New Zealand are themselves exemplars of NPM (O'Flynn, 2007); instead, we take a different approach to the analysis of this paradigm shift.

Our approach highlights the efforts of governments to meet the demands of citizens, while at the same time positioning themselves to react to changes. As a result, the new term applied to public administration in the current millennium identifies a horizontal network composed of private, public and non-profit organizations (Bingham, Nabatchi and O'Leary, 2005). In other words, governance adopts a stakeholder perspective. According to Freeman (1984), a stakeholder is categorized into four groups: shareholders, employees, customers, and members of the general public (as cited in Clarkson 1995). The new approach of governance regards voters as the stakeholders, public administrators as employees, users of governance as customers, and non-voters as members of the general public. E-Government can promote greater public participation in governance, while concurrently enabling the government to provide better service implementing EG. As Gil-Garcia and Pardo (2005) argue, EG focuses on the conceptualization

of information technologies for the purposes of public service delivery, to improve effectiveness in public management, as well as the promotion of democratic values and mechanisms.

In the following sections of the paper, this analytic shift is applied to various aspects of EG development. Specifically, we provide evidence of the developments in definition, scope, activity, and organizational development of EG. In addition, we adopt the process view of organizational development in addressing the context of EG development.

### **3. Electronic Government: Process of incorporating technology**

This paper argues for an evolutionary process development view. We hope that this will contribute to the existing knowledge of best practices, protocols, and implementation processes of EG in government service delivery. To better understand the domain of EG studies, we conducted a review of some of the most cited definitions of EG. Table 1 displays some of these definitions.

Author	Definition	Focus
Heath (2000)	Government becomes e-government when the public sector digitizes its processes and interactions, whether internal or external with business or with the public	Technology
Allen, Juillet, Paquet & Roy (2001)	IT-led reconfiguration of public sector governance –and how, knowledge, power, and purpose are redistributed in light of new technological realities.	Technology
West (2001)	The delivery of government information and services online through the Internet or other digital means	Adoption
Gómez and Ospina (2001) and Beaudin (2001)	The use by government agencies of information technologies that have the ability to transform relations with citizens, business, and other arms of the government creating a wealth of new digital connections	Technology
Gronlund (2001); Turban et al. (2002)***	The strategic application of information and communication technology to provide citizens and organizations with more convenient access to government information and services; and to provide delivery of public services to citizens, business partners and suppliers, and those working in the public sector.	Adoption
Fang (2002)	A way for governments to use the most innovative information and communication technologies, particularly web-based Internet applications, to provide citizens and businesses with more convenient access to government information and services, to improve the quality of the services and to provide greater opportunities to participate in democratic institutions and processes	Adoption
Criado, Hughes and Teicher (2002)	Refers to the adoption of information and communication technologies (ICT) by government to improve access to services	Technology
Muir and Oppenheim (2002)*	e-Government refers to the delivery of [government] information and services online through the Internet or other digital means	Adoption
United Nations, (2002)**	The use of information and communication technologies to provide public information and services to citizens and businesses.	Adoption
Breu, Hafner, Weber and Novak (2005)	The use of the Internet and other electronic media to improve the collaboration within public agencies and to include citizens and companies in administrative processes	Adoption
West (2005)	Public sector use of the Internet and other digital devices to deliver services, information, and democracy itself.	Adoption
Irani and Elliman (2008)	Process of delivering information and services to customers (citizens, business, and public administration) electronically by Government.	Adoption
Lee, Irani, Osman I, Balci, Ozkan and Medeni (2008)	E-Government is the process of delivering information and services to customers (citizens, business, and public administration) electronically by the government	Adoption (Process View)
Lau, Aboulhoson and Atkin (2008)	The process of connecting citizens digitally to their government in order that they might access information and services offered by government agencies	Adoption (Process View)
Walser, Kuhn and Reidl (2009)	E-government refers to the support of business processes within and across the public administration through the application of IT	Adoption (Process View)

**Table 1: Definitions of Electronic Government**

\* as cited in Kumar, Mukerji, Butt, Persaud (2007)

\*\* as cited in Dimitrova and Chen (2006)

\*\*\* as cited in Phang, Sutanto, Li and Kankanhalli (2005)

The definitions are sorted by their year of publication. The focus of each definition is highlighted. As illustrated in Table 1, there are in fact three trends. The first is technology, as to what technology is and does. The second is adoption, where it describes how technologies are used. The third trend is process adoption, where the focus is on analyzing how technologies are incorporated into organization operations. These three trends are supported by the analysis given by Dwivedi, Weerakkody and Williams (2009) describes the shift from a technology perspective to the adoption perspective as supported by studies by Azad B. and Faraj S. (2009), Janssen, Joha and Zuurmond (2009), Yoon and Chae (2009), Navarra and Cornford (2009) and Kim, Kim and Lee (2009). The focus of this study is mainly on the adoption of EG, however it is recognized that technology and the adoption of EG are complementary. Bearing in mind these developments, we first explore the stage view of EG development. Following that, the process view is adapted to a multidimensional model of EG development.

#### **4. Electronic Government Adoption**

Stages of EG development have been a topic of interest during the past two decades. Several models of EG implementation are presented in the literature, and illustrate the developments in this area. The adoption of EG services can be viewed from different the most common and most tightly related being the stage view and process view. In this first part of this section, the stage view of EG implementation is described. Later the process view is introduced and described as a more recent and compatible view of EG. The first part of this section identifies eleven stage models based on a comprehensive review of the literature. The stages in the development models

are carefully investigated and subsequently a six stage model is proposed which presents the comprehensive view of the current EG development models. Table 1 displays the various models and the proposed six-stage model.

**Table 1: Stages View of Electronic Government Development**

Author/s	Stages						Scale
	Cataloging	Interaction	Added services	Transaction	Integration	Org. Transformation	
Hiller and Belanger (2001)	✓	✓		✓	✓	✓	5 Stages
Backus (2001)	✓	✓		✓		✓	4 stage models
Layne and Lee (2001)	✓	✓			✓ <sub>1</sub>		4 stage models
Howard (2001)	✓	✓		✓			3 stage models
United Nations – DPEPA (2002)	✓ <sub>2</sub>	✓		✓	✓		5 stage
Atallab (2001)	✓	✓		✓	✓		4 stage models
Baum and Di Maio, cited in, Seifert and Petersen (2002)	✓	✓		✓		✓	4 stage models
Chandler and Emanuels (2002),	✓	✓		✓	✓		4 stage models
Deloitte research cited in (Al-Sebie, Irani, and Eldabi, 2005)	✓	✓	✓ <sub>3</sub>			✓ <sub>4</sub>	6 stage
Reddick (2004)	✓			✓			Focus on 2 stages
Murphy (2005) as cited in Weerakkody and Dhillon (2008)	✓		✓			✓ <sub>5</sub>	

1 Includes two stages: Vertical Integration; Horizontal integration

2 Includes two stages: emerging; Enhanced.

3 Includes three stages: Multi-purpose portals, Portal personalization, Clustering of common services.

4 Considers integration and org. transformation as a single stage.

5 Includes two stages: Automating & Transformation of business processes; Rethinking policy objectives.

According to the proposed six-stage model, EG starts with a one-directional display of information known as catalogues. In the second stage, the users of the system can interact with the service provider to complete certain tasks. The third stage is categorized with provision of expanded services and personalized solutions for users (Al-Sebie, Irani, and Eldabi, 2005). In the fourth stage of EG development, the services will allow the users to complete certain transactions. This fourth stage is the integration of services and process in government for enabling the provision of seamless and more diverse services. The fifth integration stage will require vertical as well as horizontal interaction within and among various functions (Hiller and Belanger, 2001; Backus, 2001). The sixth and last stage is organizational transformation, which focuses on automation of organizational processes, and the transformation of organizational structure as an enabling factor to provide services to citizens. To achieve these goals, governments will be required to set new “policy objectives” aligned with the new information technology and new processes. As evident from these studies, process view operations are an integral part of EG development. Keeping this in mind, we describe the process view in the context of EG in the next section.

#### **4.1 Process View of Electronic Government Adoption**

In the previous section, we described the stage models of EG development and proposed a comprehensive model. As an integral part of EG development, the process view is a focus of the more recent developments in EG.

From a process perspective, the development of EG can be studied at three levels: technology, internal processes, and external processes (Hiller and Belanger, 2001). Significant

changes at the technology level during the past two decades have enabled organizations to move from the provision of catalogue information to offering dynamic and transactional services to citizen. Moreover, the attention to internal and external processes has enabled government to align their information infrastructure with citizens' needs and their operational capabilities. The increased maturity of EG operations calls for a shift of attention from management of inter-functional processes to intra-organizational and inter-organizational processes (Gottschalk and Solli-Sæther, 2008). At the early stages of EG adoption, governments are still focused on operation of processes within specific functions. To provide advanced services through EG, organizations implemented intra-organizational integration to share knowledge. Institutionalization of new processes is a key factor to success at this stage. However, to create further value through EG, the integration of processes as well as institutionalization of processes need to be expanded across various organizations involved in EG services. Finally, there is a need to align strategic goals of various government agencies with citizens' requirements and needs (Gottschalk and Solli-Sæther, 2008).

Based on our review of most cited studies in the area of EG development, we propose a framework designed to illustrate the process view of EG. This framework is based on the various levels of EG analysis (Hiller and Belanger, 2001), scopes of analysis, core activities in each domain (Gottschalk and Solli-Sæther, 2008), the proposed stage model of EG development and process development in organizations (Melao and Pidd, 2000). EG in this model is viewed as a tool toward organizational development, where organizations experience a sequential growth, institutionalize new processes and alter their activities and structure (King and Toe, 1997). Figure 1 illustrated the process view of EG development.

**Figure 1: Process View of Electronic Government Development**

Melao and Pidd (2002)		Process View
Proposed Model		Stages of EG Development
King and Teo (1997)		Organizational Development
Gottschalk and Solli-Sæther (2008)		Core activity
		Scope of Analysis
Hiller and Belanger (2001)		Level of analysis

According to the proposed EG development model, the scope of analysis in EG adoption is focused on inter-organizational processes. As a result, the core activity in EG adoption is strategy alignment among various departments (Gottschalk and Solli-Sæther, 2008). Consequently the adoption of EG is believed to be at the “activity and structure evolvement” level of organizational development (King and Teo, 1997). This is in line with the latest stage of EG development, organizational transformation. In the next section, we explain how EG development is adaptable to the process view of organizational development. Furthermore, we contend that a social view is needed for the development of EG in public sector.

## **5. The Process View of Electronic Government Development**

Melao and Pidd (2000), in their seminal study of organizations, describe a four-stage model of organizational development. Their model is the centerpiece of the framework. It is applied to develop our proposed framework for EG adoption. According to them, during the organizational development, the execution of operations in organizations is viewed from four perspectives: a Mechanistic View, a Dynamic View, Interacting feedback loops, and Social Views.

### *Mechanistic View*

In the context of a mechanistic view, attention is directed to the provision of services based on the functional view of service delivery. This view supports an operational perspective that focuses on efficiency and effectiveness of defined processes. For example, this view assumes an understanding of the need for governments to reduce transaction costs, while simultaneously increasing and maintaining efficient service delivery (Berenice and Baron, 2009). According to Finger and Pécoud (2003) the State has undergone substantial transformation over the past 15 to 20 years, caused by a series of factors and pressures that have forced the State to adapt to a new and increasingly global environment. The delivery of services to the public by the government requires it to incur great amount of expenses that are associated with transactions that are affected by the very extent of specialized investments that have to be made to support such transactions (Ellis, 2004). The underlying incentive for governments to deliver as much of their services in electronic form as possible is to reduce transaction costs. The government, therefore, relied on improving its operational structure, instead of its regulation or policy-making functions (Finger and Pécoud, 2003). The government also sought to reduce the financial pressure by passing on the reduced transaction costs to citizens, its primary user of government services, while simultaneously strengthening its legitimacy by improving the quality of its services

through the modernization of its departments (Finger and Pécoud, 2003). However, there are several important barriers to a full implementation of EG in the public sector: security, privacy, and financial commitments by governments, among others, complicated by the fact that administrators and policy makers lack the knowledge and historical expertise in IT management, a major component of EG (Norris and Moon, 2008). Administrators and policy-makers may also lack knowledge and historical expertise needed to provide government services online. Moreover, provision of online government services goes beyond simply enabling user access to information. It also requires interoperability between departments and agencies that are part of the EG system, as well as a stable IT infrastructure that can handle trading of data between central processors (Norris and Moon, 2008). Poorly implemented infrastructures can lead to information systems downtime that will hinder the system's capability to provide services to its users; it is therefore critical to integrate internal and external information systems that are electronically linked to those of other organizations (Ellis, 2004).

#### *Dynamic View*

One of the many reasons that government departments have traditionally operated based on the functional design of organization in the delivery of services is that each individual department has its own culture and operational procedures. However, government services have however, evolved a step beyond, in giving greater focus to citizen-centered service delivery. Still, government services are delivered in an asymmetrical manner in cases where various service delivering agencies are not just collaborating with each other, but the services that are being delivered fall within the realm of customer service relations, that the services are reflective of the needs and wants of its end customers (Patel, 2007). Governments have increasingly begun to offer electronic services that correspond to the to the events that surround their citizens' life and

their business transactions, and that promise to enhance the accessibility of services as well as reducing service delivery delays and costs (Gouscos, Kalikakis, Legal and Papadopoulou, 2007).

Prior to the availability of EG services, citizens and businesses would often face bureaucratic confusion when trying to use government services, as procedures are vague and ambiguous, and in the context of overlapping authority between departments (Gouscos, Kalikakis, Legal and Papadopoulou, 2007). However, given the historical experience of government services delivery, there tends to be a lack of confidence in the government's ability to provide a resolution that will reduce the lack of trust by users of its services (Belanger and Carter, 2008). Trust is defined according to Rotter (1971) in Belanger and Carter (2008) as an expectancy for a delivery of a result, that promises to an individual or group can be relied upon, and is rooted in social learning theory (Belanger and Carter, 2008). It is not an assumption that users of government services will either distrust or trust EG services, the internet and the government's ability to resolve users' historical concerns about bureaucratic services; rather, it suggests a trend where governments are undertaking, as a process, to deliver services that are a reflection of societal changes.

### *Interacting Feedback Loops*

With the progressive improvements in the technology for EG infrastructure and the competency of users, the EG systems started to adopt interacting feedback loops in their operations. The early stage of EG had been primarily focused on the need to deliver plain data, where user friendliness and addressing various usage trends were not a priority. However, the rise and mass integration of the digital age from work to daily communication activities imposed changes in EG. These changes would require the governments to ensure that users of services are successfully engaged. This called for more attention to adoption aspects of EG services, such as user friendliness and

tracking of usage trends. These developments paved the way for the promotion of higher transparency in government (Bekkers and Moody, 2009).

With the emerging trend of using information technology tools, along with their growing use by the general public, EG has not only captured the attention of the IT sector, but also of government policy decision-makers, policy institutions and public administrators (Andersen and Henriksen, 2006). Currently, there exists a broad spectrum of research on the best approach to move government delivery services forward, where the scope of transformation will include external users such as citizens, businesses, and arms-length government agencies (Andersen and Henriksen, 2006). However, the challenges that face public administrators include not only merging IT into government services delivery, but also facing resistance in its internal organizational structure, since EG strongly emphasizes citizen-centric and not bureaucratic-centric (Seifert and Chung, 2009). The reason for such an assertion is that before undertaking a changeover to EG, administrators and policy-makers must identify appropriate services from hierarchical repositories, where the specifically chosen category for each service needs to be known a priori. In doing so, it will allow users to understand their implicit semantics, and enable them to design an effective and stable framework by designing appropriate control and data flow structures (Barnickel, Fluegge and Schmidt, 2006). What Finger and Pécoud (2003) call “operators’ modernization has allowed public services to be delivered in a way that is increasingly similar to those of the private and third sector operators, with the potential outcome that the public sector will be modernized and could ultimately be operated by private or third sector actors (Finger and Pécoud, 2003).

### *Social Views*

The most recent development in EG services is the need for greater attention to a social view of services. The social view of the EG processes is concerned with how well EG services can address the customers' needs and expectations. This view goes beyond the adoption of technology to enhancing the capabilities of users to utilize the EG potentials (Macintosh and Whyte 2006). Macintosh and Whyte (2006) highlight the importance of social view of EG process by pointing out that the success of any EG initiative is dependent upon the participation of citizens. Having a top technical system without the citizens' participation is an example of a failed EG initiative. Maad and Coghlan (2008) describe the shift of focus from a technical view of EG service to a social one. In a recent study, Grundén (2009) expanded on this social view of EG services and also described the social consequences of services delivery through EG. From her perspective, the social view of EG is not limited to the end users of the services (the citizens). The social view extends to all stakeholders, which include the government employees and system operators. When an EG development initiative advances along with technical and structural change the employees should also be trained according to the new ways of doing things. Grundén (2009) views competency development as an integral part, and the most social aspect, of EG development. Building on the foundation of organizational developments in EG service provision, this study proposes an EG adoption model based on a social view of EG services.

## **6. Synthesis**

The development of electronic services delivery in governments has evolved substantially within a short period. Departments are becoming more reliant on ICT as its primary channel for citizens

and businesses to access their mandated services. Such an evolution in usage is becoming part of the general practices of department strategic planning and will only continue to grow in its importance. The changes that have been made in government service delivery mechanisms are not purely in responses to shifts in public administration, or shifts in technology advancements and the private sector inclusively; but rather this policy to transform government services is to reflect growing public expectations, their trends and the need for fiscal conservation. The resulting effects of EG in the new era of public service delivery is its institutionalization within the public domain. This study contributes to the existing literature by describing the developments in EG. The current scope of analysis in EG adoption is directed to inter-organizational integration, while the required core activity is strategic alignment among various stakeholders. As for organizational development associated with EG, governments are currently concerned with recognizing the required new activity and structure, as well as with identifying the best organizational transformation plan. From the process perspective, addressing the social view of EG services is presented as the major issue now facing the public sector. The proposed model is a reflection of the trends that are being implemented in the public sector, and is subject to its share of resentment by public administrator due to the fact that EG is viewed as an external agent that is not part of the traditional framework of public service delivery. However, EG ultimately will become more utilized and integrated partly due to paradigm shifts in public administration and partly due to the advancement of technology. The proposed EG development model can be employed in future studies for analyzing the current practices and plans for future EG developments.

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