ORGANIZATIONAL CHALLENGES FACING INTEGRATING E-GOVERNMENT SYSTEMS: AN EMPIRICAL STUDY

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Abstract
Through passing of e-government systems into different stages, the integration stage of e-government can be considered the most important one of the implementation of an e-government system. It represents the highest potential of providing customers (citizens, businesses and public administration) with full online interaction with their governments thus enabling them to obtain government information and services from a single point of access. The importance of the integration stage of an e-government system and its highest positive impact motivate local/national governments to reach this stage.

However, in order to reach the integration stage of e-government, local/national governments face various challenges; these challenges could be political, technical, economic, social or organizational. In fact, there is a lack of studies focusing on identifying the importance, categorization and presentation of strategies for overcoming organizational challenges. Therefore, this paper will try to fill the information gap based on empirical case studies of two local governments. This article will identify the importance, categorization, and presentation of the strategies for overcoming organizational challenges facing an integration e-government system.

Keywords: Organizational challenges, e-government integration

Introduction
E-Government is the application of Information and Communication Technology (ICT) to improve the activities of government (Zeleti and Ollila (2011)). It is one of the strategic innovations that many government agencies have considered adopting to support the development of government operations and deliver efficient government services (Mousa (2013)).

However, over the last decade, governments all over the world have realized the importance of providing government services and information

electronically to improve the efficiency, cost and quality of the government information and services provided to the public (Al-Hujran and Al-dalahmeh (2011)).

The process of implementing an e-government system passes through various stages until it reaches its highest potential stage which is the integration of government information and services in different departments, functions and levels of the government system. This enables customers to obtain government services and information online from a single point of access (Al-Sebie and Irani (2005)).

The integration stage of e-government represents its highest potential of providing customers (citizens, businesses and public administration) with full online interaction with their governments thus enabling them to obtain government information and services from a single point of access. Therefore, the implementation of an e-government system is very important. Local and national governments ultimately seek to reach this stage because of its positive impact.

There appears to be a lack of studies that focus on identifying the importance, categorization, and presentation of strategies for overcoming the organizational challenges. This paper will try to fill in the lack of information based on empirical data derived from two case studies (the Dubai e-government and the Sharjah e-government).

The purpose of this paper is to: identify the importance, categorization, and presentation of the strategies for overcoming organizational challenges facing an integration e-government system as shown in the conceptual model. However, this paper will first present a discussion on the importance of the integration stage. This will be followed by the identification of the framework of this study. The research methodology used for gathering data will then be explained. Finally, the empirical data (derived from two local governments) regarding organizational challenges facing integration e-government system will be discussed.

The importance of the integration stage of an e-government system

The stages of e-government are essential to the e-government system because e-government systems pass through a number of stages until they reach the highest potential of providing customers with full online interaction with their governments. This enables them to get government information and services from a single point of access (Al- Sebie (2011)).

Comprehensive literature review such as (Al-Sebie *et al* (2005), Irani *et al* (2006) and Al- Sebie (2011)), shows some points regarding the integration stage of e-government system: (a) the integration stage is the final stage of e-government, (b) it is given different names such as

'transformation' and (c) there is a significant total agreement that the main purpose of the final stage is to integrate government information and services in different departments, functions and levels of the government system to enable citizens to obtain government services and information online from a single point of access.

The integration stage of e-government is most important to the implementation of an e-government system. The importance of the integration stage of e-government represents the highest potential of providing customers (citizens, businesses and public administration) with full online interaction with their governments thus enabling them to obtain government information and services from a single point of access. Moreover, local/ national governments might seek to reach the integration stage of an e-government system for several reasons such as the saving of time, effort and cost of delivery of services by increasing the efficiency of internal government processes. This makes the delivery of external services quicker and enabling customers to obtain services from single point of access.

The Framework of this Study

To identify the framework of this research, three points should be taken into consideration:

1. Provider or server of government information and services can be divided (based on stages of e-government system) into government organization or local/ national government (Al-sebie (2005)).
2. In order to reach the integration stage of e-government, local/national governments face various challenges. These challenges could be political, technical, economic, social or organizational.
3. As shown from Table 1 below (Al-Sebie *et al,* 2005), the scope of implementation of different stages of e-government can be clarified as follows:

- Different stages until e-government reaches the transaction stage of e-government system are implemented inside one (specified) organization.
- Integration stage that includes different organizations, departments and agencies of local and or national government is implemented by local/ national government.

Table 1   The scope of implementation of different stages of e-government

Stages	Scope of implementation
Different stages until e-government reaches the transaction stage.	Inside one (specified) organization.
Final stage (integration).	Includes different organizations, departments and agencies of local and/or national government.

Consequently, this paper focuses on organizational challenges that are faced by local governments towards implementation of integration services among different organizations, departments and agencies (Figure 1) (Al-Sebie and Irani (2005)).

Figure 1   The Framework of this Study
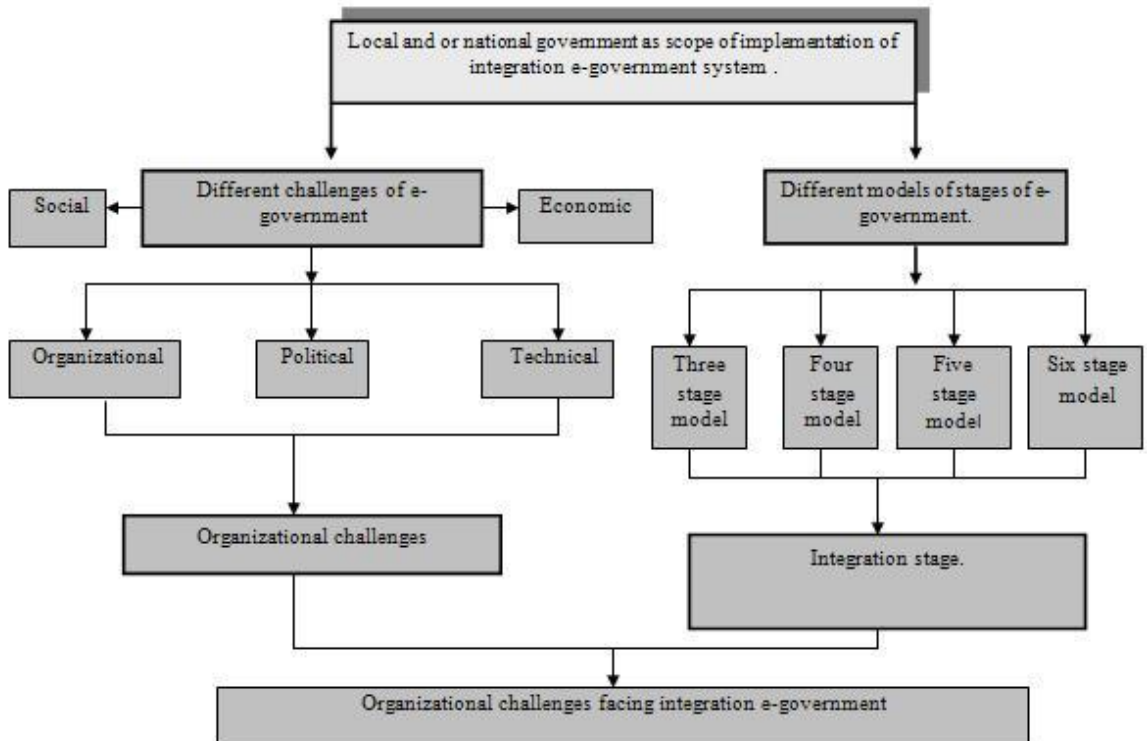
Empirical Research Methodology

To realize the purpose of this paper, a case study (two cases) strategy has been chosen for gathering data. The following table (Irani *et al* (2006)) shows the different stances, strategies and methods available in the research

methodology area; the chosen approaches for data gathering considered the most suitable; and justification for the decisions:

Table 2 Types of approaches chosen, and the justification(s) for the decision

Approach	Types of approach	An appropriate approach	Justification(s) for the Decision
Stances	Critical, interpretivism, positivism (or scientific), post-positivism	Interpretivism	The organizational challenges facing an integration e-government system need to be understood from the participants' points of view.
Methods	Quantitative, qualitative, mixed	Qualitative	▪ This paper focuses on organizational processes and seeks to understand individual experiences of work. ▪ Qualitative method allows exploration of a phenomenon that is extremely little known. ▪ Rich empirical data is required to give more understanding of an organizational challenges facing integration e-government system. ▪ The need for rich empirical data means that the use of the qualitative methods is more suitable for this paper because it enables the processes to be examined in-depth.
Strategies	Case study, grounded theory, ethnography, etc…	Case study	▪ E-government is relatively a new area with little and limited research. Therefore, the interpretivism case study is more suitable. ▪ The case study strategy enables the author of this paper to study the phenomenon in its natural settings. ▪ Studying of organizational challenges facing integration e-government system in their natural settings will help the author to understand the nature and complexity of organizational challenges. ▪ The case study strategy allows the author to understand in-depth the context of the organizational challenges facing integration e-government system.
	Single or multiple case studies	Multiple case studies	Multiple case studies enable the researcher to cross-check and examine the finding of the research through analysis of data across local governments.

Conceptual model for the technical challenges

To meet the purposes of this paper, targeted organizational challenges of integration e-government systems have been identified based on: (a) conceptual model proposed by (Al-Sebie and Irani (2005)) and, (b) the experience of the author of this paper (see Figure 2).

Figure 2   Proposed conceptual model for organizational challenges
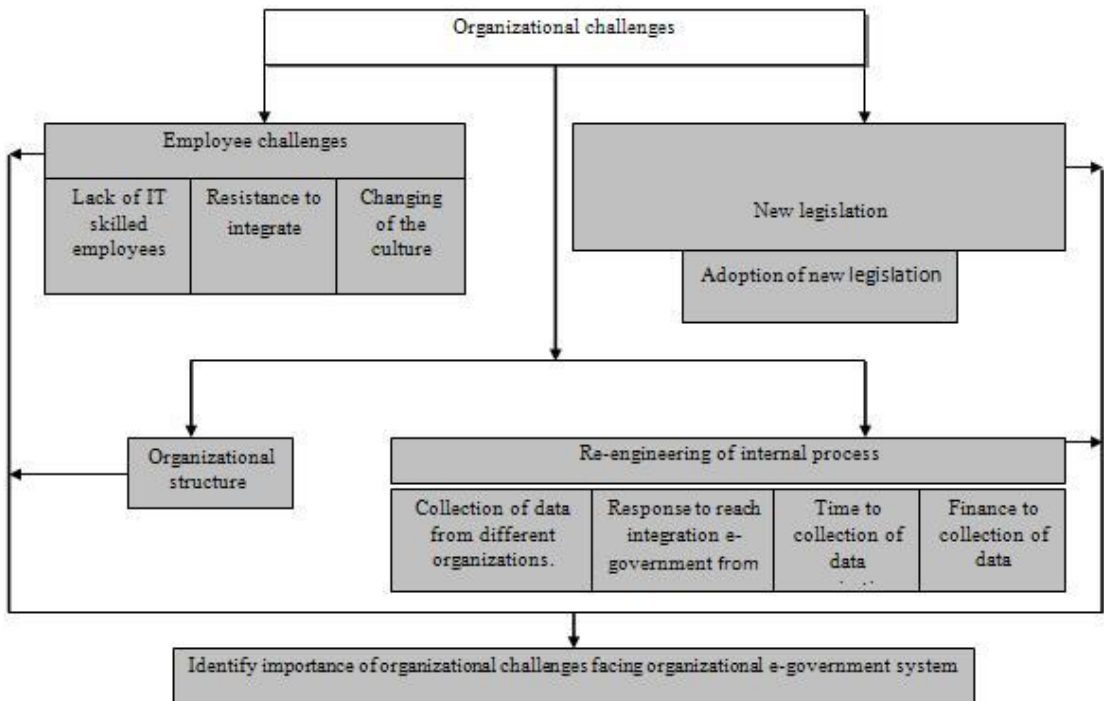
Empirical data regarding organizational challenges

Based on empirical data derived from the case studies of two local governments (see sections 7 and 8) and to meet the purpose of this paper, Section 9 will identify the importance of organizational challenges facing integration e-government systems included in the conceptual model (see Figure: 2). Additionally, Section 10 will categorize organizational challenges facing the integration of e-government systems included in the conceptual model (see Figure: 2), based on levels of importance. Finally, section 11 will provide strategies used/suggested to overcome organizational challenges facing the integration of e-government systems included in the conceptual model.

Case study one – Dubai eGovernment (DeG)
Background to the local government
   The first case study is that of the Dubai eGovernment (DeG) that started in 2000. DeG is responsible for setting the general strategy of eGovernment as well as leading, guiding and supervising the eTransformation processes at the level of government entities and contributing to achieving the objective of building knowledge - based society in Dubai. DeG publishes policies, frameworks and standards through a collective effort of experts in the overall domain of eGvernment and also consults with various stakeholders to help them reach integrated eGovernment.
   To meet the purpose of this paper, the DeG and SheG (case study two) are considered as local governments that responsible to the integration of government information and services in different departments, for different functions and at different levels of the government system, enabling customers to obtain government services and information online from a single point of access.

Organizational challenges facing integration e-government systems at DeG
   This sub-section aims to provide the perceptions of the interviewees related to the importance of organizational challenges facing the integration of e-government systems at DeG. Four stakeholders who were involved directly in the implementation of the e-government project were interviewed using structured interviews. The stakeholders interviewed were the General Manager of DeG (G.M), Manager of Systems Management Sections (Infrastructure Management Department) (S.M), Supply Chain Management Section Manager (Government Resources Planning Systems Department) (R.P) and Senior Content Editor (Communication & Business Development Department) (C.D).
   The interviewees were asked to identify the importance of each organizational challenge identified in the conceptual model proposed in Section 5. The levels of importance presented in the tables 3 and 4 of this paper follow a scale similar to that used by Miles and Huberman (1994) with values of: (a) unimportance; (b) importance and, (c) very importance presented by ◯ , ◖ and ● espectively. In those cases where the interviewees did not give a response regarding the level of importance, the author of this paper use the mark '-' to indicate this reaction.
   Table 3 summarizes the perceptions of the interviewees when asked to identify the importance of technical challenges.

Table 3   Organizational challenges facing integration e-Government system in DeG

Categorization of organizational challenges	Organizational challenges facing the integration e-government system in DeG.	G.M	S.M	R.P	C.D
Employees	The lack of IT skilled employees	○	●	●	●
	Resistance to integrate (from different organizations).	●	●	●	●
	Changing the culture of organizations regarding transmission to an integration e-government system.	◑	●	●	●
Reengineering of internal Processes	Collection of data from different organizations.	◑	◑	●	●
	Response to reach integration e-government from different organizations	○	◑	●	●
	Time required to collection of data from different organizations	◑	◑	●	●
	Finance required to collection of data from different organizations.	○	-	○	○
New legislation	Adopting new legislation to deal with new issues such as one gate electronic receipts and digital signatures.	◑	-	●	●
Changes of Organizational Structure	Change of organizational structure to meet the requirements of integration e-government system.	-	○	●	◑

Case study two – Sharjah e-Government (SheG)
Background to the local government

The second case study is that of the Sharjah e-government (SheG). SheG developed and implemented a comprehensive program to upgrade and boost the technical capabilities of various Departments and Authorities with the aim of enhancing the process of delivering governmental services according to the latest developments and experiences realized in the fields of information technology in different countries. One of the purposes of SheG is transforming government services into integrated, secure, and value creation e-services through effective business, IT, and infrastructure transformation.

Organizational challenges facing integration e-government systems at SheG

This sub-section aims to provide the perceptions of interviewees related to the importance of organizational challenges facing the integration e-government system at SheG. Four stakeholders involved directly in the implementation of the e-government project were interviewed using structured interviews. The interviewees were the Projects Manager (P.M), Vice manager of e-government Management (V.M), Manager of Project Management Office (M.O) and Consultant (C).

Interviewees were asked to identify the importance of organizational challenges facing the integration of the e-government system at SheG. The level of importance presented in the following table follows a scale similar to that used by Miles and Huberman (1994) (see sub-section 7.2). Table 4 summarizes the perceptions of the interviewees when asked to identify the importance of each organizational challenge.

Table 4   Organizational challenges facing integration e-government system in SheG

Categorization of organizational challenges	Organizational challenges facing integration e-government system in SheG.	P.M	V.M	M.O	C.D
Employees	The lack of IT skilled employees	●	●	●	●
	Resistance to integrate (from different organizations).	●	●	◑	◑
	Changing the culture of organizations regarding transmission to an integration e-government system.	●	◑	◑	●
Reengineering of internal processes	Collection of data from different organizations.	◑	●	●	◑
	Response to reach integration e-government from different organizations	◑	◑	◑	●
	Time required to collection of data from different organizations	●	●	◑	●
	Finance required to collection of data from different organizations.	○	○	◑	○
New legislation	Adopting new legislation to deal with new issues such as one gate electronic receipts and digital signatures.	◑	●	●	●
Changes of organizational structure	Change of organizational structure to meet the requirements of integration e-government system.	◑	◑	◑	●

The Importance of organizational challenges

This section seeks to identify the importance of organizational challenges which are identified in the conceptual model (see Figure 2) facing integration of e-government systems based on empirical data derived from two case studies (DeG and SheG) presented in sections 7 and 8.

The importance of organizational challenges

The purpose of this sub-section is to provide the findings derived from analysis of the data presented in Tables 3 and 4 regarding the importance of organizational challenges facing the integration of e-government systems from two case studies.

- The lack of IT skilled employees, resistance to integrate (from different organizations) and adopting new legislation to deal with new issues such as one gate electronic receipts and digital signatures are considered by most interviewees as very important challenges. Few interviewees claimed that these challenges were important.

- The perspectives of interviewees were almost divided into two groups regarding changing the culture of organizations regarding transmission to the integration of e-government systems, collection of data from different organizations, response to reach integrating e-government from different organizations and time required collect data from different organizations. Some interviewees claim that these challenges are very important, while other interviewees claim that they are important.

- Change of organizational structure to meet the requirements of the integration of e-government systems is considered by most interviewees as an important challenge. Few interviewees claimed that this challenge were very important or not important.

- Due to the availability of money and the fixed budget provided by upper management, finance required of collection of data from different organizations is considered not a important challenge by all interviewees – except very few who claimed that this challenge is important.

Categorization of organizational challenges

In light of the above discussion (see section 9) and to satisfy the aim of this paper, the purpose of this section is to categorize those organizational challenges from the perspectives of the interviewees of the two case studies (DeG and SheG), based on levels of importance. This categorization could benefit decision-making in other local governments attempting to reach an

integration e-government; it will allow them to pay more attention, focus on and give consideration to the challenges and try to minimize or avoid them.

Categrisation of organizational challenges

As a result of the above discussions (see sub-section 9.1) regarding the importance of organizational challenges facing the integration of e-government systems based on the empirical data presented in Tables 3 and 4, Table 5 shows the categorization of these organizational challenges based on levels of importance.

Table 5 Categorization of organizational challenges

Organizational challenges facing transactional e-government systems by two case studies	Level of Importance of Challenges	Reference
The lack of IT skilled employees.	*Almost very important*	**Based on the perspective of interviewees of two case studies** (DeG and SheG)
Resistance to integrate (from different organizations)		
Adopting new legislation to deal with new issues such as one gate electronic receipts and digital signatures		
Changing the culture of organizations regarding transmission to an integration e-government system	**Between very important and important**	
Collection of data from different organizations		
Response to reach integration e-government from different organizations		
Time required to collection of data from different organizations		
Change of organizational structure to meet the requirements of integration e-government system	*Almost important*	
Finance required re-engineering and changing the internal business processes of the organization.	**Almost not important**	

Strategies for overcoming organizational challenges

To realize the aims of this paper, the purpose of this section is to provide strategies used/suggested for overcoming organizational challenges as identified in the conceptual model (see Figure 2), facing the integration of e-government systems taken from empirical data of the two case studies presented in sections 7 and 8. 'Used' strategies means those already applied by local governments (DeG and SheG), while 'suggested' strategies means those derived from the perspectives of interviewees based on their experiences. These strategies could help other local and/or national governments attempting to reach an integration e-government to overcome or avoid such challenges. It should be noted that, solutions have been identified from comprehensive literature reviews such as (Al-Sebie and Irani

(2005), and Al-sebie (2005)) were written in underlined while strategies have been derived from empirical data are written in *italics* in the following table. However, Table 6 shows the strategies for overcoming organizational challenges facing the integration of e-government systems.

Table 6 The strategies used/suggested to overcome the organizational challenges

Strategies used/suggested to overcome the organizational challenges facing transactional e-government system in two case studies	
Employees challenges	**Solutions to challenge of lack of skilled employees**
	▪ Training of employees *internally according to the suggestions of consultancy* to meet the aims. ▪ Encouraging employees by giving them prizes (money, certificates) to train to deal with new technology. ▪ Bringing (contracting) new skilled employees (*outsourcing*). ▪ *Knowledge transfer.*
	Solutions to resistance to integrate (from different organizations)
	▪ Arranging workshops for employees to upgrade their knowledge on an *integration* e-government system. ▪ Raising awareness of an *integration* e-government by sending e-mails to employees describing importance and benefits of an integration e-government to *organizations*, customers and employees. ▪ Assuring that e-government will not affect negatively the authority and jobs of employees. ▪ *Valuable prizes to encourage more cooperative organizations.* ▪ *Meeting with high managers of different organizations and convince them the importance and benefits of transmission to the integration of e-government systems.* ▪ *Using of the authorities of top management to push different organizations to be cooperative.*
	Solutions to challenge of changing culture of organizations regarding transmission to e-government
	▪ Raising awareness of e-government by arranging presentations and sending e-mails to employees describing importance of *an integration* e-government to *organizations*, customers and employees. ▪ Arranging workshops for *organizations* to upgrade their knowledge of *an integration* e-government. ▪ *Bringing of an international companies to show the importance and benefits of an integration of e-government.* ▪ *Workshop for top managers of different organizations and convince them the importance and benefits of transmission to integration e-government system.*

Challenges of re-engineering of internal processes	**Solutions to challenge of collection of data from different organizations**
	▪ *Survey of the level readiness of different organizations to transform to an integration e-government system.* ▪ *Creating of shared teamwork and making of regular meeting between DeG and different organizations to facilitate collecting of data.* ▪ *Using of different ways (directly or indirectly) to make sure the accuracy of data.*
	Solutions to challenge of response to reach integration e-government from different organizations
	▪ *Support from higher management to escalate different organizations to response and cooperate to reach an the integration of an e-government.*
	Solutions to challenge of time required to collect data from different organizations
	▪ Creating timetable for doing tasks. ▪ *Following up of plan that depends on appointment of aimed people and defining of requirements.*
	Solution(s) to challenge of finance required to collect data from different organizations
	▪ *Almost not important challenge.*
New legislation challenges	**Solutions to challenge of adopting new legislation to deal with new issues such as gate services, electronic receipts and digital signatures**
	▪ Defining legislation that needs to be changed or introduced in order to facilitate reaching *an integration* e-government system. ▪ Benefits from other experiences. ▪ *Benefits from e-legislations of united Emirates.* ▪ *Creation of Key Performance Indicator System (KPIS) to measure performance of e-government at all levels and follow different organizations to make an appropriate legislations and suggest new legislations (if required) that meet the aims of an integration e-government system.*
Challenge of changes of organizational structure	**Solutions to challenge of changes to organizational structure to meet the requirements of an integration of e-government**
	▪ Identifying need for structural changes to organisations. ▪ Convincing management of importance of structural changes and requirements. ▪ *Recommendation of* adopting new organizational department(s) to ensure success of *an integration* e-government project. ▪ *Gradual change by convincing of culture change rather than hierarchal change.*

Conclusion

      The lack of studies that focus on identification of the importance, categorization and, presentation of strategies for overcoming organizational challenges facing the integration of e-government systems pushed the author of this paper to focus on filling in this information gap based on empirical data derived from two local governments case studies (DeG and SheG).

      To the best of the author's knowledge, no empirical study to date has focused on the organizational challenges facing the integration of e-government systems, so that this paper may be considered one of the pioneer studies in this area of e-government. It can also be claimed that this paper has made a novel contribution to the area of e-government and has expanded the boundaries of knowledge, especially for local/ national governments that are seeking to reach the integration of e-government systems. Novel contribution to the area of e-government can be summarized as following:

      Firstly, identification of the importance of organizational challenges facing the integration of e-government systems is novel because it can lead to improved analysis through enhancing the work of decision-makers in local/ national governments when they take the decision to reach the integration of e-government systems. It can also assist researchers in understanding organizational challenges facing such a system.

      Secondly, a novel aspect of categorization of organizational challenges facing the integration of e-government systems is that it could benefit decision-making in local/ national governments attempting to reach integration by allowing them to pay more attention to, focus on, and give consideration to those challenges which are very important or important. It could also help them to minimize or avoid the challenges and enable researchers to analyze and understand organizational challenges facing the integration of e-government systems. Additionally, it could benefit decision-makers by supporting the management when they take the decisions needed to reach the integration of an e-government system.

      Thirdly, the final important contribution made in this paper deals with providing the strategies used/suggested for overcoming each organizational challenge (included in the conceptual model) facing the integration of e-government systems. These strategies are novel and could assist decision-makers in other local/national government by supporting the management when taking decisions to reach the integration of e-government systems to overcome or avoid such challenges. This could then leads to improved IT sophistication.

      Lastly, this paper has tried to put the organizational challenges facing the integration of e-government systems into perspective. An interesting foundation has been laid to study organizational challenges facing the

integration of e-government systems. More concrete inferences might be drawn by future research studies in this area.

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