E-Government: Practices, Maturity, Models, Adoption and Factors

*Khawla Kayed Hasan Bany Domi and Fatma Susilawati Mohamad

Faculty of Informatics and Computing, Universiti Sultan Zainal Abidin, Besut Campus, Malaysia.

*Corresponding author: kkaldom07@gmail.com

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Abstract

There is a little research that concentrates in all e-government backstage so this study has been done in order to cover this gap. This quantitative based study gathers data by conducting in-depth desk review. It covers the most important topics that relate to e-government as maturity, models, development, evolution, factors, adoption and best practices and more. This kind of research is important since it is considered as comprehensive and holistic. Several literatures are reviewed in order to collect information about several e-government topics all around the world. E-government best practices, the level of adoption, the level of development and evolution, e-government maturity, e-government models of maturity, e-government perspectives, lessons from different communities and factors that affect the level of deployment all are mentioned and explored here. This study contributes to the scholars since it gathers data about all e-government related issues it abbreviates and demonstrates e-government procession. It proposed general framework which is considered as roadmap. At the end of this research there are tremendous recommendations and conclusion which shorten the whole study.

Keywords: e-government; development; evolution; practices; models; maturity.

Introduction

It is undoubtedly true that there are tremendous definitions related to e-government terminology based on this fact; E-Government can be declared as basically the application of ICT to provide government services to the citizens through internet which leads to faster and better communication, retrieval of data and utilization of information to its users so the most important potentials that can be gained from e-government are to accelerate transactions, provide good-communicational strategy, it fasten the retrieval of data and increase the utilization of information also E-government can be defined as a process of reengineer the traditional government more over e-government is one of the sub-category of information technology and ICT that has allowed the governments to present the information and services efficiently.

There are several potential of e-government it reduces the time, increases the effectiveness, improves after sales services with lower cost, improves services information, introduces new services, increases the degree of confidence in investigating the requests and services, increases the speed of cash payments, facilitates services receive, establishes communications with users and improves the quality of services. The data was analyzed by means
of Likert Scale and the mean of views. According to the results of questionnaire, applying the tools of e-government improves users’ satisfaction (Mahmoodia and Nojedehb, 2016).

However, the general and suitable definition is a strategical mechanism that uses ICT-based application to reform its basic functionality and to provide its services to the whole community electronically.

The question that can be asked here is what is the relationship between e-government and government business process reengineering (BPR) as prerequisite for the implementation of e-government. The answer can be found based on reengineering and quantification approach that is used by many studies which examine that the e-government and (BPR) are interactive, complementary and mutually reinforcing so in order to perform e-government system there are a need for process re-engineering and reform the traditional government to be compatible with technological strategies.

The implementation of e-government based on (BPR) put forward, and the current government information model and e-government information model are compared. Simply it can be said that construct the e-government system, reengineer the government business process, the development of e-government and government process reengineering are complementary. The direct goal of the government process reengineering is to support e-government system. Government process reengineering is the self-transformation and innovation of the government to adapt and use modern (information communication and technology (ICTs)) (Li and Yang, 2016).

This paper tries to draw the line for general e-government system by choosing different topics. In order to do this, it is divided into several sections:


From E-government to M-government

It is important to mention the mobility process’s need and possible user needs within a set of possibilities and describe a requirement for mobile government in order to find a new field for mobile government as a type or new form of e-government and utilize its potentials which is represented by mobility, availability and accessibility. This could help to face uncertainty, reduce complexity and try to overcome the major challenges that may hinder the growth and development of this important system. Mobile government promotes government strategies by utilizing the benefits of emerging mobile technologies with e-government to become one and unified information system and prepares the available solutions to avoid redundant development (Roggenkamp, 2004).

E-government Adoption by citizens

In the context of exploring the adoption and implementation of e-government it is important to identify its potentials such as reduces costs, improve services, save time and increase effectiveness and efficiency in a public sector and the major obstacles that hinder its adoption. There are a number of external and internal challenges associated with the implementation of e-government in addition to the high costs associated with implementation. Infrastructure costs, computer literacy, privacy issues, accessibility, availability, and trust issues as some of the major challenges and obstacles that impede the implementation and adoption of government in the Kingdom of Saudi Arabia. Costs associated with the implementation of e-government negatively affect the e-readiness of various government departments for e-government (Basamh et. al., 2014).
The major question that might come to the mind with respect to e-government system is how to increase citizen adoption in e-Government as it becomes especially important by providing its potential to reduce costs and improve service. Here it is good to propose e-Government adoption model which takes into account issues of cultural variables; risk; control and technology acceptance. However, Citizen Trust is proposed to be an important catalyst of e-Government adoption in order to use the potential benefits that are provided by e-government. In order to influence citizen to continuously use e-government it is important to build and engender trust in e-Government, it is important to build institution-based trust such as an independent judicial system, characteristic-based and cognitive-based antecedents.

The proposed model has practical implications for the design of mechanisms for the adoption of e-Government. It is noticeable that the adoption of e-Government processes is a critical component in the creation of an efficient and responsive New Public Management (NPM) (Warkentin et. al., 2002).

There is a positive psychological tendency of the citizens’ cognitive beliefs about e-government quality. It is important to measure the level of citizen’s awareness and adoption of e-government. The empirical result shows that the beliefs about e-government quality are strongly related to positive feelings toward e-government so the quality of e-government system plays a vital role in increasing the level of adoption or the level of influence by citizens and it is the role for government to provide highly secured and best quality services (Aladwani, 2014).

When exploring e-Government adoption there are wide variety of inhibitors such as organizational support, self-efficacy, benefits, and loss and regret aversion, control, transition costs, sunk costs/switching costs, uncertainty, habit, resistance, and inertia. The major challenge which organizations face in launching their innovations and the conquering of new markets is the resistance to use. It is mentioned that Explanatory models of e-Government adoption are based on the premise that user behavior results from users’ intentions, which derive from users’ beliefs and attitudes.

Because of that the existing models fail to explain the adoption of e-Government, these models must be complemented to explain the cause of citizens’ failure to adopt e-Government. In order to achieve the desired goals there are attempts to build a satisfactory model include the design of dual models (jointly analyzing facilitators and inhibitors) and integrating models (jointly analyzing the interaction between intention and habit in prompting behavior) (Rey and Medina, 2017).

By examining the adoption of e-government using a vast body of literature produced by academia, international organizations and practitioners, the major factors that cause the low adoption of e-government system are the following: firstly the deployment of e-government was for a long time concentrated on more technological and operational matters which is need to be defined institutionally and politically. Secondly, institutional and political barriers are one of the main factors explaining the lack of e-government adoption and finally untrustworthiness of decision making process which hinder citizens’ trust in government that lead to low level of e-government adoption (Savolde et. al., 2014).

Several dependent variables such as information quality, trust, and system quality were integrated with the unified theory of acceptance and use of technology (UTAUT) constructs as examining variables affecting the adoption of e-government. The proposed conceptual model of e-government adoption which can provides numerous potentials such as improving service delivered to the citizen concludes that although technological, governing and social issues have to tread carefully in order to provide successful adoption the most important e-government adoption factor is the trust (Witarsyah et. al., 2017).
E-government models and maturity

E-government Perspectives and best practices

There are different models or different perspectives of e-government which are (G2C): which is aim at increasing government accountability, freedom, transparency, e-democracy, e-voting, services, e-legislative and accessibility and (G2B) which is characterized by public and private partnerships and aim at increasing collaboration between public sector and private sector, increasing governmental business support. And (G2G) which aims at increasing the levels of interagency collaboration, force citizen for information sharing it shows that e-government will convert from guarded evolutionary to be radically transformative (Ummel, 2010).

It is important to mention that (back-end, Web design, Web content and external practices) are considered to be e-government best practices. The best practice model which contains e-government portals best practices which are considered among the success factors of e-government portals and their purposes must be mentioned. And a maturity models which can be used to provide guidance and guidelines (which have several stages of maturity and each stage include a set of best practices used to rank the maturity of e-government portals) best practices using extensive literature review.

It discusses the extent to which e-government maturity models are covering the best practices of the eGPBPM (E-Government Portals' Best Practice Model) by making a map between the maturity models’ best practices for each maturity stage and the best practices of the eGPBPM. It concludes that although this set of maturity models are used in practice, they include only some of the e-government portals’ best practices. It was noticed that none of the maturity models is covering all the best practice subcategories of the eGPBPM. Moreover, all the maturity models miss at least half of the best practices of the eGPBPM (Faith et. al., 2015).

E-Government maturity

The maturity of e-Government around the globe was influenced by changing levels of affluence, ICT, human capital, and governance. It is good to mention that rising affluence and improved ICT make e-Government grow faster whereas human and governance do not affect e-government maturity. On the other hand, the high level of e-Government maturity can be attained through investment in ICT infrastructure, without substantial changes to human capital or governance.

The lack of significant effects for these variables should be probed further with alternative measures of human capital (such as computer literacy and ICT skills of citizens) and governance (such as social capital). This paper attempts to overcome methodological challenges by estimating a mixed-effects model on an international panel data set (Das et. al., 2017).

E-Government maturity models

To get an overview about the maturity models of e-government a research that has conducted a qualitative meta-synthesis of twelve e-Government stage models is chosen and examined. This model include major contents as firstly Concepts, secondly metaphors (presenting, assimilating, reforming, morphing and e-governance), and finally themes (citizen/service and operation/technology) all of these components are contained in these developmental models also they are synthesized using reciprocal translation technique and are extracted through a series of in-depth semantic analyses of descriptions and explanations. A supportive line of argument is developed for this frame of reference so that different e-Government stage models can be translated into each other.
The metaphors and themes identified in this study would be useful as a conceptual frame for researchers to evaluate and understand the development of e-Government, and as a base road map for practitioners in planning future e-Government projects. This study produces a common frame of reference for understanding the developmental stages and perspectives reflected in different models and stages of e-government (Lee, 2010).

In an attempt to provide a review of the key e-government maturity models discussed in the literature. And to highlight some of the commonalties among the current models and prepare the basis for capturing some of the broader dimensions of public sector services that need to be facilitated through e-government. This can be done through identifying and mapping cohesions across the models. Key results namely presence, communication and integration and the level of interaction and complexity can be found in all models. The models have several common features and similar stages. None of the models present anything new. Most models have three main stages that Capture presences, communication, and integration (Almuftah et. al., 2016).

Recently there is a proposed a hybrid model that is more proficiency and fully advantages, efficient and beneficial from Citizen comprehensive vision and the strategic framework of e-government models which demonstrate the improvement of best practice in any e government activity because E-government perceived to provide a way for governments to renovate their operational activities and to serve their clients more competently. The execution files of these mixture models have ended up being superior to the individual segments (Mateen et al., 2017).

Development and evolution

It is important to explore the development in leading government papers which can be inspired by such a kind of research studies as Heeks and Bailur this kind of analysis uses a different sampling method, adds new themes, and focuses on changes. The main approach which can be used by this kind of research study is citation density. Through an iterative process known as template analysis themes such as perspectives of the impact; impact causes of e-government, methods used, underlying research philosophies and recommendations are considered.

At the end results shows that the key notions in e-government, being governments, services or actors, all are treated rather vaguely or mysteriously, unsystematically and with no reasoned motivation, thus e-government research scope seems unfocused. There is an increase in the use of primary data, and some movement in focus from infrastructure and services towards citizens. There is little development in the discussions of generalization of results and recommendations offered (Madsen et. al., 2014).

The most important issue that relates to e-government system is analyzing the thematic evolution of the e-Government field this can be accomplished using such a powerful open source science mapping software tool as SciMAT and analyze the evolution and relevance of the literature focused on e-Government Science mapping indicates that there are constant evolution which prevent from reaching the maturity stage in smart cities (provision of public services), prevent from reaching the maturity stage in e-Participation (political area) and prevent from reaching the maturity stage in technologies used and citizen's acceptance (technological tools).to sum up it can be said that there is a constant evolution and to success e-government need what so called as a dynamic growth or evolution (Munoz et al., 2017).

E-government Factors

By examining implementation mechanism of the factors, strategies and action plans that explored in Jordan to overcome the economic, social and managerial problems, which may affect the effectiveness of the implementation of e-government and to ensure the success of e-government program so this study assume that the most important challenges that must be taken into
consideration as it hinders the development of Jordan e-government initiatives are classified as economic, social and managerial problems.

It is important to mention that there are several ways that are used to evaluate the process of development of e-government system in different countries for example SWOT (strengths, weaknesses, opportunities and threats)-Ranked voting was used to evaluate and rank the strategies developed for e-government program in Jordan. Ranked voting theory is a measure of individual interests and preferences as an aggregate towards a collective decision. E-government strategies have been evaluated to ensure its success in the context under investigation. Kendall tau rank correlation coefficient was used to measure similarity between the rankings that have been obtained as a result of the experiment (Elsheikh and Azzeh, 2017).

The empirical implementation of Malaysian e-government can be accomplished by identifying the major challenges that the Malaysian government faces. South Korea as a developed country will be a benchmark for this study. By using the Design-Reality Gap model which is introduced by Heeks, this study will compare issues related to implementation of e-government in Malaysia as a developing country and South Korea as a developed country.

One of the considered researches has shown that there are six key factors that determine the success or failure in e-government implementation in Malaysia. In general, these factors are considered to be a pillar of e-government. Inadequate technical infrastructure, lack of skills, insufficient financial resources, unclear ICT policy, poor leadership and lack of integration will lead the mission of e-government to be failed (Ramli, 2017).

When reviewing studies that highlights critical success factors in building e-government applications it is found that it reviews various options available for deploying the principle of e-government and it examines a lot of e-government application from developing countries and examples of successful implementations, different models of e-government service delivery, elements that promote readiness in implementing e-government, the potential services and benefits from e-government must be demonstrated to citizens using quick strike project; re-reengineering processes key steps which is the most important procedure toward the adaption of e-government system.

The following seem to be important to implement successful e-government in developing countries which represent the key factors toward successful: Strong project management skills are needed within the department. Project managers need to clearly identify goals and benefits. Adoption of established standards and protocols can minimize customization. Instead of reinvention, off the shelf software should be used if it is available so it can reduce the time and cost of implementation. It recommends that: Systems analysis for re-engineering process should be done internally.

Design, software development, data preparation, training can be outsourced this kind be an effective way of management. Building partnership with private sector is considered critical it has lack knowledge about IT development. So the private sectors need more and more training in using technology based system by providing them with well-qualified experts in this field and increase their awareness about using new technologies (Bhatnagar, 2002).

The literature indicate that there are general challenges that might hinder the adoption of e-government system in countries all around the world however the most important challenges that must be taken into considerations are low literacy level and even most of the people are living below poverty line, Unawareness of e-government system among people, local language of the country can impede the development of e-government system sometimes especially when there are a variety of languages of a particular area, privacy for the personal data of the people (Mittal and Kaur, 2013).
Recommendations, contributions and future works

Examining the use of decision making processes in e-government projects and its outcome among governmental agencies this can contributes to the decision sciences, the fields of e-Government; information systems and public administration by. It integrates the defining and weighting of objectives, resource allocation and assessment and to what extent risk analysis as the major variables. It concludes that the major feature for the successful projects are involving more activities related to formal decision-making procedures that is having more formalized decision-making process related to stakeholder inclusion and weighting of objectives, managing more types of risks especially organizational one (Sundberg and Larsson, 2017).

Frontline workers who try to serve clients, even “when the server crashes can play a vital role for successfully implementing e-government policies and Practitioner Points. The result of this study shows that: firstly, Frontline workers have a wealth of knowledge about implementation challenges, such as technical problems, impossible caseloads and unclear rules. Secondly Despite extensive coping skills, frontline workers may also experience considerable strain when implementing e-government reforms. Governments should try to address challenges that the frontline faces in their daily work in order to save its steps toward successful (Tummers and Rocco, 2015).

The following are selected articles that provide a wide variety of insight into the character of the e-government space, both today and into the future. First article which is on Differentiating Government IT (Alanis, 2010) which examines the power of governments to benefit their people and regions, this article offers lessons to e-government’s three constituencies (employees, IT suppliers, and the general public) on the development, supplying, and consumption respectively of e-government solutions. Second article on E-Government and Agility (Baker, 2010) which shows how practices within e-government can help cash-strapped municipalities continue to provide services and find new ways to serve in these tough economic times.

It is highly recommended that some rules must be set for electronic crimes, privacy, and free flow of information, consumers’ rights, and electronic trade. So the major challenges that may hinder or regulate the diffusion of e-government are security issues and electronic crimes, privacy issues, free flow of information while the major successful factors that stimulate the diffusion of e-governments are represented by its potentials as cost and time reduction for service transactions, provide effective and efficient services, increase the trust level of investigating services and several uncountable benefits that lead the society to success and promotion (Mahmoodia and Nojedehb, 2016).

It is important to set the stage to better understand the e-government topic and its sub-dimensions, also to explore the influence of e-government familiarity and to understanding the relative awareness of e-government concepts. There are several important concepts in this context such as perceived usefulness, perceived ease of use, privacy and security assurance, and trust in e-government. On the one hand the results indicated high levels of awareness in regard to service provision, time and location, and necessity of information needed. Dimensions like digital divide (gender and accessibility) and social change were among the highly recognized topics or issues. On the other hand, e-participation and political concepts of e-government were moderately perceived. It also indicated a significant influence of familiarity with e-government. Governments need to raise awareness regarding e-government initiatives and improve citizens’ familiarity with the topic. It is recommended that it is important to understand how citizens perceive e-government projects and if they understand what e-government means (Abu-Shanab, 2017).

This research study contributes to e-government scholar as it makes a general brief of e-government system. The future research may need to consider the influence of the major variables
trust, digital divide, security and privacy on the development of e-government in the developing countries especially.

Conclusion

Variables that connected to e-government notion as being systematic governments, the services that are provided by e-government and the actors of e-government must be emphasized and it must be considered in the research scholars as it leads to better development and better adoption. There are several challenges toward e-government initiatives in developing countries these challenges might hinder the adoption of e-government initiatives and e-government procurement process which are resistance to use technology, digital divide and local politics so in order to enhance the level of leverage it is the responsible for government to take into account some verbal solutions (Siahaan, 2017).

Also when reviewing conference papers and journal paper that discusses evaluation/assessment, implementation plan, and success and failure factors of e-government. The analysis revealed that there is limited attention toward knowledge management in e-government, readiness for e-government and security/privacy issues.

This indicates the need for future research (quantitative and qualitative) in these areas in order to establish a coherent conceptual frame work that will include success and failure factors that affect the adoption of e-government and emerge effective implementation plan for e-government system and evaluate e-government system by comparing cost and benefit (Mishra and Mishra, 2015).

The smart government is defined by politics, values, and evidence and concept of service innovation to achieve the public sector. It should rather introduce conceptual and systemic innovation relating to a new way of thinking about e-government experience since it has numerous potentials (Savoldelli et al., 2014).

Conflict of Interests

There is no conflict of interest regarding the publication of this paper.

References


