

Transition from e-Government to m-Government: Challenges and Opportunities - Case Study of UAE

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Abstract

This study aims to explore the challenges of the transition from e-government to m-government as well as to identify and develop a workable framework on m-government standards, protocols and its inherent opportunities for various business engagements. The objectives of the study are to identify strategic challenges in various government organizations that impede transition from e-government services to m-government services, formulate a framework of m-government for government and private business organizations to tackle the challenges and enhance the opportunities using Fuzzy Delphi method, and to validate the proposed framework using Fuzzy Delphi method. A survey questionnaire is used to gather data on the study constructs. The validation of formulated framework is based on Fuzzy Delphi method. Descriptive statistics is used to determine the frequency of the demographical variables. Independent sample T-test is used to test the hypothesis in order to show the variance in the constructs against the dependent variable. This study has identified through systematic literature review five (5) categories of challenges and opportunities.

Keywords: e-Government, m-Government, mobile government, challenges and opportunities.

Introduction

e-Government plays a major role of information dissemination to the public thereby facilitating implementation of government services, transactions, policy implementation and resource distribution across agencies which results in agencies experiencing cost reductions and improved efficiency, while citizens receive faster, more convenient services (Trinkle, 2001). Adoption and implementation of E-government in UAE though faced with challenges and barriers became increasingly relevant to providing a superior flow of information delivery of government services. In the recent years, the public, as well as government employees deployed at various organizations, have witnessed the proliferation of mobile devices. This has resulted in the transition from e-government to m-government also known as (Mobile government) as more people are recognizing the importance of m-government since mobile devices are readily available with them anytime and anywhere (Song, 2005; Pandey and Sekhar, 2013). Transition to M-government became imminent as the rate of mobile phone penetration across the Emirates was on record high (Al-Khoury, 2012).

M-Government which is defined as the extension or evolution of e-government through utilization of mobile technologies for public service delivery (Oui-Suk, Uhm, 2010).

Problem Statement

The transition from e-government to m-government has also posed some challenges (Sharma & Gupta 2004; Song 2005; Weerakkody et al., 2007). Many of these challenges to total implementation have both social and technical dimensions ranging from people awareness, privacy of information, data security, trust, and technology training skills (Abu Tair & Abu-shanab, 2014; Al-Shboul, et al. 2014; Qader & Kheder, 2016). Some authors have also outlined some challenges to include; cultural, political, structural, legal as well as social and administrative (Abu-Shanab, 2012; Al-Thunibat et al. 2010; Fasanghari & Samimi, 2009; El-Kiki & Lawrence, 2007; Mukherjee & Biswas, 2005; Antovski & Gusev, 2005; Kim et al., 2004.).

In 2015, the two-year deadline imposed by UAE government for m-government services to be implemented across all government organizations ended and a remarkable milestone of 96.3% implementation was reached in 337 most important government services. 41 government entities scored a milestone of above 90% transformation, (Bernd DJ 2015). The research problem evoked considerable interest that warranted proper investigation into the challenges that most of the government entities encountered and some of the barriers that hindered their complete transition from E-government to M-government within the given time frame of transition and beyond. This study, therefore, focused on exploring these challenges as well as identifying ways to evaluate the framework on m-government standards, protocols and its inherent opportunities for various business engagements.

Literature review

Visions of sustainable development have led many nations around the world to strategized different methods to develop strong Information Communication Technologies (ICT) infrastructure to boost services delivery and increase economic growth. The modern era is seen to revolve around a digitized society which has great potential to impart both social and economy status of citizens. Such significant impacts on the economy and society includes economic growth, job creation, increase in productivity, poverty reduction, increase in accessibility to quality healthcare and education as well as reduction in environmental pollution as shown in Table 2.1 (World Bank “World Development Report 2016). ICT is a powerful tool to facilitate developmental goals acting as a strong enabler that improves communication and knowledge sharing (UN Millennium Project, 2005).

DIGITAL IMPACT			
Economic		Social	
Economic Growth	Increased digital penetration has a substantial impact on economic growth	Poverty	Experience in countries such as Bolivia and India show that digital can be a tool for inclusion and increased income among the disadvantaged
Job creation	Digital has a powerful multiplying effect: international cases show that each digital job creates 2-4 jobs elsewhere in the economy. Moreover, those are high-value jobs (wages ~30% above average)	Healthcare	E-health enables new forms of healthcare management and provision, increasing patient coverage and improving quality
Productivity	The industries that most harness digital experience the greatest productivity Increases SMEs that make better use of digital grow faster	Education	Education can be provided to the masses at low cost and good quality, using e-education tools
Job creation	Digital has a powerful multiplying effect: international cases show that each digital job creates 2-4 jobs elsewhere in the economy. Moreover, those are high-value jobs (wages ~30% above average)	Environment	Digital can make an enormous contribution to the environment: (it might contribute with ~15% reduction in CO2 emissions, for example, by using smart grids)
		Other	Moreover, there is evidence of the impact of digital on reducing crime, increasing road safety, enhancing financial inclusion, and improving farming

ICTs also play a critical role in speeding up the flow of information and knowledge between government and citizens and transforming the way in which governments and citizens interact (Castells, 2009; Varian et al., 2005).

The ultimate goal of E-governance is to reach the society with efficient services for business economic growth, modernized government services, transparency in government and maintaining a stable democratic governance (Atkinson & Castro, 2008). Electronic Governance is the application of technology by government to transform itself and its interactions with customers, in order to create impact on the society (Estevez & Janowski, 2013).

E-government in UAE

The initiative launched in 2001 focused on three distinctive categories (eServices- for the provision of efficient quality electronic mediated services aimed at meeting customer's needs); (eReadiness - for strengthening the ability of federal government entities to handle the needed technology, coordination and human resource management) and ICT management focusing on infrastructure, training and policy implementations (Al-Khoury, 2012). As shown in Table 2.3, UAE ranked 29th in UN development Index in terms of E-participation indicating a strong push for digitalized government service delivery and governance in general across the emirates.

As stresses by Hassan, Jaber, and Hamdan (2009), there is a solid connection between e-government and m-government strategies. As further pointed out by Abdelghaffar and Yousra (2012), the fundamental reason that impact the transition from e-government to m-government are proliferation of cell phones in the UAE society as well as the appearance of versatile web and portable applications and administrations of mobile phones which has gathered momentum as compared with the conventional wired personal computers. This remarkable development has changed how nationals see the cell phones usefulness as citizen see further how mobile phone can not only be used for calling and interacting but as means for exchanging data, trading texts, and sending and receiving messages from government portals (Kushchu & Kuscu, 2003).

UAE Transition from E-government to M-government

Proliferation of mobile device in the UAE is among the key factors that has revolutionized the electronic governance across the emirates. A report by Newzoo' Global Mobile Market (2017) placed UAE on the top list of countries with the highest smart phone penetration (80.6%). (<https://newzoo.com/insights/rankings/top-50-countries-by-smartphone-penetration-and-users/>).

As a nation in the forefront of E-government adoption in the GCC, transition from E-government to M-government was imminent as emphasized in the government developmental vision of 2021.

The UAE initiated the strategic developmental plan to transit from E-government to M-government in 2013 with the ambitious goal to lead the world in excellence in mobile technology government through making every government service available on mobile phone which can be access 24 hours/7days within two year from its launching. A report in 2015 on the ambitious goal of UAE transition from E-government to M-government showed that 41 government entities reached a milestone success in transiting from website to mobile application service delivery covering 337 government services. Undoubtedly, Challenges were faced as many government entities especially the small one could not meet the dead line set by the government in 2015.

This study aims to investigate the challenges and barriers as well as opportunities to successful implement M-government across all government and private entities in the emirates of Dubai, UAE. In so doing, the researcher carried out a systematic analysis of 70 papers as well as official newspaper publications, postgraduate dissertations and research publications for the period of 2012- 2018.

Research Methodology

A survey questionnaire will be used to gather data on the study constructs and the validation of formulated framework will be based on Fuzzy Delphi method. Statistical Package for Social Sciences (SPSS version 25) will be used for the encoding of data collected for analysis. Descriptive statistics will be used to determine the frequency of the demographical variables. Independent sample T-test will be used to test the hypothesis in other to show the variance in the constructs against the dependent variable. One-way ANOVA test will be used to show the variance amongst the framework variables. Multiple Regressions will be used to illustrate the challenges that influence the smooth transition from e-government to m-government. Fuzzy Delphi Method will be used for framework formulation and Nominal Group Technique (NGT) will be employed for the validation of the framework.

4.1 Research design

In this study a quantitative research approach was employed to investigate and collect data on the construct concerning challenges, barriers an opportunity encountered in the process of transition from e-government to m-government service delivery of the emirate of Dubai, UAE. Data was gathered through self-administered survey questionnaire which sought

opinions from involved government personnel in the implementation of m-government across established government institutions in the emirate of Dubai, UAE. The outcome of the data gathered generated interferences in answering the stated research questions and hypothesis.

4.2 Framework formulation

Process	Methods
Framework proposition	Analysis of prevailing framework and guidelines
Framework validation through survey questionnaire (Fuzzy Delphi Method)	Project assessment Framework proposed by Esteves and Joseph (2008) which incorporates; Technological dimension, Strategic dimension, Organizational dimension, Operational, services and economic assessment dimensions

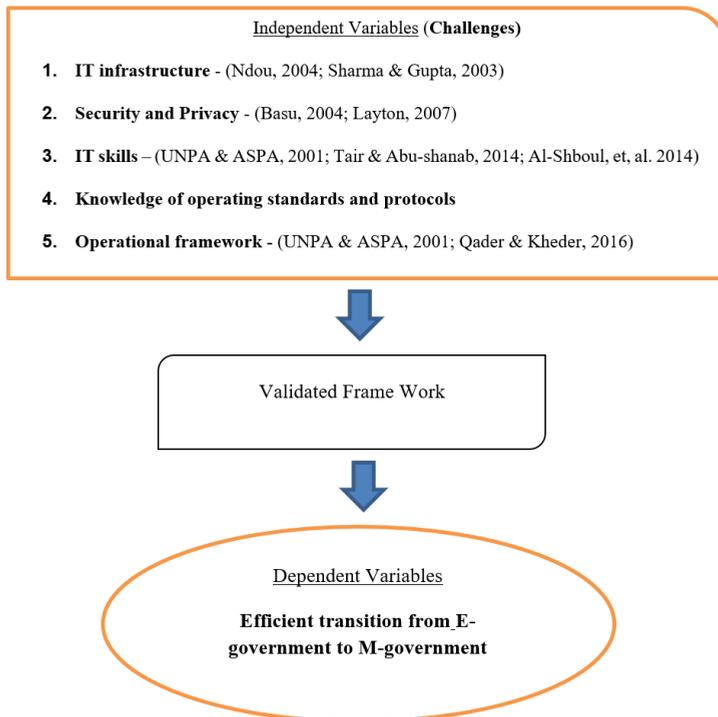
4.3 Population and sample size

Burns and Grove (2003) identified research population as all the elements that meet the criteria for inclusion in a study.

In this study, the target population includes Dubai government employees as well as employees from private business establishments that are fully engaged in electronic and mobile government service delivery and transaction exchange. The total target population is estimated at 750 employees.

According to Polit et al (2001) a sample is “a proportion of a population”. In this study the sample size includes employees from ten (10) government organizations and employees from ten (10) private business organizations in the emirate of Dubai, United Arab Emirates (UAE) with a total of 250 employees. Sample size was estimated base on the percentage of employees per organizations.

Overview of Conceptual Framework



Instruments (Questionnaire)

The questionnaire was designed to better gather expert opinions on the challenges in the transition from e-government to m-government service delivery from government and private establishments in Dubai, UAE. The questionnaire consists of three (3) sections.

The first section is designed to gather demographic data of the respondents. The second section consists of questions to obtain professional opinions based on IT infrastructure, Skills and operational protocol. The third section consists of open-ended question base on trust, security and privacy. Questions were structured following a 4-point Likert scale (1. Strongly disagree, 2. Disagree, 3. Agree, 4. Strongly agree).

Variable	No. of Items
IT INFRASTRUCTURE	5
IT SKILLS	5
SECURITY, TRUST AND PRIVACY	5
KNOWLEDGE OF OPERATING STANDARD AND PROTOCOLS	5
OPERATING FRAMEWORK	5

Data Analysis & Result

No	Objectives	Methods	Data Analysis
1.	To identify strategic challenges in various government organizations that impede transition from e-government services to m-government services	Systematic Review of Related Literature	Data Reliability Test a) Cronbach Alpha
2.	To formulate a framework of m-government for government and private business organizations to tackle the challenges and enhance the opportunities using Fuzzy Delphi method	a) Research title and research problem. b) Review of related literature c) Listing of constructs	Descriptive Statistics
3.	To validate the proposed framework using Fuzzy Delphi method	Fuzzy Delphi Method (Expert opinion through Survey questionnaire)	a) Normal Curve distribution b) Hypothesis Testing - Independent sample T-test - ANOVA - Multiple Regression

Conclusion

This study facilitated the formulation of the study framework regarding the challenges and opportunities of transition from e-government to m-government. Through the process of screening and reading the main text of journal articles five (5) categories were identified which constituted the study constructs. In this study, the findings show that the independent variables (IT Infrastructure; Security, Trust and Privacy; IT Skills; Challenges of Organization Coordination; Knowledge of Operating Standard and Protocols; Operating Framework) are significant for an efficient transition from e-government to m-government). The findings show that the independent variables (IT Infrastructure; Security, Trust and Privacy; IT Skills; Challenges of Organization Coordination; Knowledge of Operating Standard and Protocols; Operating Framework) are significant for an efficient transition from e-government to m-government).

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