



The Case of eReadiness on eGovernment in Developing Nations: Case of Egypt

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ABSTRACT

Electronic government (eGovernment) is one of the growing applications of information and communication technology. It has several advantages for citizens and government as well as having macro implications on overall socioeconomic and business development. Governments around the world have thought the design and implementation of their eGovernment projects; however, there are only a handful of nations that have managed to achieve their desired targets while others failed or were less fortunate to realize an impact from the deployment of information and communication technology when it comes to government services and processes. This paper reports on a research conducted in Egypt that explores how citizens' eReadiness could affect eGovernment success and helps identify factors such as culture that can affect eGovernment successful implementation in the context of developing nations. The paper also addresses the important role citizens play as the main stakeholder of the eGovernment framework and the primary target and beneficiary for eGovernment projects.

INTRODUCTION

Emerging information and communication technology have changed many aspects of our lives over the last two decades. Their implications on the individual, organizational and societal levels are unmatched by any other industry in recent history. One of the most important and emerging applications in the last few years has been the use of information and communication technology in government logistics and operations better known as electronic government (eGovernment). It has the potential of making government operations and processes more transparent and more effective for both citizens and businesses alike. eGovernment has the potential to provide a variety of diversified benefits for the community at large such as overcoming the complexity of bureaucracy, increasing the efficiency of the economy, reducing services time, and permitting businesses and citizens to connect to government information anytime and have an involved role in the decision making process in national issues. In a nutshell it brings all the stakeholders of the community closer and makes them more involved in the management of the economy with its different sectors and industries. The evolution of different information and communication technology has had the greatest impact on the development of the concept of electronic government.

Although many eGovernment projects were developed in developing nations, few have succeeded in achieving their set targets whilst a larger number have arguably failed. Looking to the statistics of successful eGovernment projects, nations which achieved their targets were highly eReady. For example Denmark, the UK and the United States got the first five ranks among 65 of the largest economies in the world while Egypt, Nigeria and Sri Lanka were in the bottom of the table (EIU, 2005). According to Accenture (2004), these nations that were eReady got a high rate of eGovernment performance. On the other hand, developing nations that started to design and deliver eGovernment projects were lacking behind developed nations that were eReady in

terms of information and communication infrastructure and they themselves had a major problem with regard to their digital divide due to poverty, high illiteracy rates, and unemployment amongst other elements. As a result of this and as an attempt to minimize the digital divide, many nations launched their eReadiness plans to enhance their citizens' capacities as well as to improve their business and government capabilities and enablers for eReadiness starting with assessing their position and conducting an eReadiness assessment position.

eGOVERNMENT AND eREADINESS

What is eReadiness?

There are various definitions for eReadiness. According to the Center of International Development at Harvard University (CID), which focuses on measuring the networked world, eReadiness is defined as "the degree to which a community is prepared to participate in the Networked World" (CID, 2003). Another definition of eReadiness provided by McConnell International, which is measuring the eBusiness risk, as "usage of computers in schools, businesses, government, and homes; affordable reliable access in a competitive market; free trade; skilled workforces and training in schools; a culture of creativity; government-business partnerships; transparency and stability in government and an evenly enforced legal system; secure networks and personal privacy; and regulations allowing digital signatures and encryption" (WITSA, 2000). Although there is no agreement of what is eReadiness, but it mainly focuses on measuring the information and communication technology infrastructure, usage, human capital and regulations (Bridges, 2001). In general, it calculates the digital readiness of a community in general reflected in the number and average of PC penetration, Internet diffusion, number of Internet usage, telecommunications diffusion and the capacities of the community at large to handle newly emerging information and communication tools.

eReadiness Process

There is a common agreement on a proper start of eGovernment by defining the country goals and objectives (Geosinc, 2002). This is followed by choosing the appropriate assessment tool and conducting eReadiness assessment that is followed by a detailed action plan that moves the nation towards setting the structure needed to realize its objectives from its eGovernment efforts. Having done so, the government will be able to define the minimum requirements needed to realize its objectives and also be more able to identify the weaknesses (Bakry, 2003). Such process puts the nation in a better position to assess the environment and more accurately formulate its eGovernment framework to potentially guarantee a more successful and smooth implementation process (UNDESA, 2003) which can be followed by a thorough analysis of the nation's digital divide status which is also a major milestone in eGovernment success (UNPAN).

What does eReadiness measure?

Currently, there are different eReadiness assessment tools existing and in use in different countries and by different agencies around the world. Each assessment is measuring a pre-defined criterion according to its objectives. On the one hand, some criteria test the physical information and communication technology infrastructure, usage, human capacity, policy environment and the growth in the information and communication technology sector economy (Bridges, 2002). On the other hand, GeoSINC (2002) defines access and connectivity, training and education and public awareness, government leadership, business and private sector initiatives and social developments as the major issues to be tested and evaluated to identify the eReadiness status of a nation and its citizens. Although there are a number of existing criteria to use for eReadiness evaluation, what is really important is to define what does the end-user needs in terms of eGovernment services to be able to access them timely, effectively and efficiently.

There are mainly four major components of eReadiness that should be made available and that includes; a) an information and communication technology infrastructure that mainly reflects the issues such as telephone lines, Internet access and diffusion as well as PC penetration; b) information and communication technology usage reflecting how citizens are using various Internet applications and services in their daily life at the individual and organizational levels, c) human capital and its relation to information technology education and training starting from the schools level and how they are prepared to educate students how to use computers and the Internet and benefit from them in their studies and research which also reflects and demonstrates the nations' readiness in terms of the digital illiteracy rates; and finally, d) information and communication technology regulation that mainly deals with the availability of regulations and acts that organize the usage of different emerging information and communication technologies with a main emphasis on Internet technologies.

RESEARCH PROBLEM

This research investigates the impact of electronic readiness within the society on electronic government success in the context of developing nations in comparison to developed nations. Furthermore, the research assesses the relationship between citizens' awareness, resistance to change and trust of eGovernment and their usage of eGovernment services that are made available. This is an important issue to understand to explain why eReady citizens are not using eGovernment and what is the perception of non-eReady citizens of eGovernment and would they use it if they become eReady or not. The other component of the research is related to eGovernment managers and how they define eReadiness within the community and how it affects their decisions. The research; therefore, attempts to answer the following research questions listed in Table 1.

eREADINESS and eGOVERNMENT IN DEVELOPING NATIONS – THE CASE OF EGYPT ered a lower middle-income economy (OECD Development Assistance Committee, 2001) with about 70 million populations (IDSC, 2005). The public administration sector is operated by the council of ministers (represented by cabinet ministers). The public administration system is tied with a variety of bureaucratic rules and red tape that consumes too much time and effort to be able to receive the services at the citizens' level. As a result and in order to overcome the problem of bureaucracy, the government launched an

administrative reform program in 1997. The Ministry of State for Administrative Development has become responsible about the project with a major target of improving the public service and simplifying administrative procedures (Sayed, 2004). In 1999, the government formulated a plan to launch Egypt's Information Society Initiative (EISI) to allow the nation to capitalize on the benefits and advantages enabled by the information and communication technology evolution and transform Egypt to become an information-based society. The plan consisted of six components; access, government, business, learning, health and culture. The focus of this research is the government component.

HISTORY OF eGOVERNMENT IN EGYPT

As the result of the importance of information and communication technology to the economy in Egypt, the government started a long range plan in 1999 and a conference was organized by the Cabinet of Egypt Information and Decision Support Center (IDSC) to define the strategic plan for the diffusion of information and communication technology for the next five years. After the conference, in October 1999, a new Ministry of Communications and Information Technology (MCIT) was established. The main objective of the ministry is to encourage both public and private sector to modernize the society at large. Both IDSC and MCIT cooperated together to launch the eGovernment project through its eGovernment portal. During the period 2001-2003, preparations were taking place for the eGovernment project through a number of pilot projects that focused on telephone bills and birthrate certificate. It is important to note that many of these projects were conducted in cooperation between the government and the private sector through a public-private partnership mechanism. In January 2004, the official portal was launched signaling the start of eGovernment in Egypt through www.egypt.gov.eg which lists all the current eGovernment services available online. The website is continuously updated and the average use by the community is regularly increasing matching the diversity of the services offered. It is estimated that the project will be completed by 2007 according to the government sources.

THE IMPORTANCE OF eGOVERNMENT TO THE ECONOMY

By applying eGovernment, there will be a number of socioeconomic returns to the community as it will increase citizens' satisfaction with the facilities enabled through the digital government services. From the economic prospective, the government would be able to save between 1-3% of the total government purchases and help increase government productivity by saving more working hours lost which is estimated to be around 900,000 working hours and around 10.2 million US dollars in monetary value of government purchases (Darwish, 2003). The indirect benefit of applying eGovernment is the fact that it will encourage investors to establish projects in Egypt which can help reduce unemployment; minimize the digital divide and help Egypt realize the comprehensive objective of having an information-based society. Additionally, this will encourage eCommerce and the completion of the national information infrastructure (EISI, 2005).

EGOVERNMENT STRATEGY

The eGovernment strategy is divided into three parts. The first part is related to the basic infrastructure. Through this phase, the government will put the fundamentals of a legal framework for applying for various services online. Additionally, the government is establishing a government gateway and communication network to deal with citizens as well as provide standard specifications that includes networking, interoperability and document classifications. The second part of the strategy is to change both citizens and businesses perception with regard to transforming government services from being paper-based to being electronic-based as well as including the private sector as a major player of providing services and including different parties such as the national postal organization to provide services to citizens. The last part of the

Table 1. Research problem questions

Q1: Is eReadiness within the community in developing nations affecting eGovernment success?
Q2: Which assessment should be chosen for eReadiness assessment?
Q3: What is the relationship between eReadiness plans and eGovernment strategy?
Q4: How annual eReadiness assessment affects eGovernment plans?
Q5: What is the stage at which the community will be ready to start eGovernment project?
Q6: How local culture factors such as awareness, resistance to change and eGovernment trust affect citizens' response for eGovernment usage?

strategy is to automate all public services offered by different government ministries and organizations (EISI, 2005).

EGYPT EREADINESS

There are many challenges that face the government of Egypt that relate to different socioeconomic issues. There is a huge number of government employees reaching about 5.3 million that equals 38% of the work force (51% of those do not have high school degree) as indicated by Radwan (2001). In 1999, the government formulated a comprehensive plan to enhance the Egyptian eReadiness index. The plans included a number of objectives including developing the information and communication technology infrastructure through increasing the number of installed fixed telephone lines that exceeded 12.4 million in October 2005 and offering free Internet access allowing over 4.5 million users to connect to the Internet. Moreover, the government encouraged public Internet cafés to be established by the private sector as well as the launching of the IT clubs initiative which addresses the needs of the unprivileged that can not afford the cost of the Internet cafés with additional benefits to learn how to use the computer and benefit from the Internet. The number of IT clubs exceeded 1000 by year end in 2004. A PC for every home initiative against a collateral and based on minimal installments also contributed to increasing the penetration of PC in Egypt. Additionally, the government tried to enhance the human capital skills by having information technology institutes contributing to a comprehensive plan to train employees and young graduates on the basic and professional information technology training needs (MCIT, 2005). Despite all these efforts, there are still a number of barriers facing the government such as 33.4% males and 56.2% females are illiterate in addition to the massive low readiness ratios among government employees (World Bank Group, 2005). Respectively, the eReadiness rank for Egypt is still low when compared to other countries according to the United Nations Development Programme (UNDP).

RESEARCH METHODOLOGY

Research Design

In order to answer the research questions, an empirical case study approach were selected (Yin, 2003). This study will focus on Egypt as a model developing nation. Three eGovernment projects were selected to cover and conduct an in-depth case study that covers them and that includes; a) the process for university admission; b) the re-issuance of the birth certificate; and, c) the re-issuance of the vehicle license. The selection was based on selecting services to citizens that are only provided by the central government and not through the public administration offices in the different provinces. All selected projects have been running for at least one year to determine if there were any impacts realized on the society through the online services provided.

The study is divided into two main phases. The first phase includes a survey addressing the issue of policy makers and project managers in concerned government organizations and affiliations including the Ministry of State for Administrative Development which is the designated government office to implement the electronic government initiative and the Ministry of Communications and Information Technology which is responsible for introducing information and communication technology at large in Egypt through projects that includes (but

not limited to) computers for every home, free Internet initiative, establishment of Internet cafés and information technology clubs as well as investing and continuously improving the telecommunications infrastructure. The second phase is divided into three stages; a) data collection from different stakeholders including directors, project managers and executive managers to define the relationship between eReadiness components and its impact on eGovernment policy maker, more or less to understand the actual process on the ground and to share with them their experiences and lessons learnt; b) understanding the process of electronic government and assessing how the vision for eReadiness could affect the successful implementation of electronic government; and, c) addressing the ultimate users and beneficiaries of electronic government to evaluate the implications of the services offered on the community at large. In order to have a clear understanding of the impact of eReadiness within the society, the survey for end-user and policy makers will run for two times on two consequent years. Through this technique, comparable results will show how the progress in eReadiness affects eGovernment success and how policy makers and managers design their eGovernment plans to adjust the changes in eReadiness.

CASE STUDY METHODS

Interviews Structure

At the level of policy makers and managers semi-structured interview questions were designed to get the managers perceptions and vision of the objectives of eGovernment in relation to the eReadiness context. With respect to the section for open-ended questions, respondents would be able to explain their experiences and the decision making process. Additionally, the selected case studies questions were developed to understand how these projects were designed and how they are managed to match the current situation of end-user readiness.

Questionnaire structure (end-users)

The questionnaire was designed to test the impact of existing readiness within the community on the usage of eGovernment services online. Closed questions were designed to test the end-user readiness with limited selection which will be tested through a pilot study and then revised and modified to conduct the main survey (Denscombe, 1999). The questions were mainly divided into four parts listed in Table 2.

Validity and Reliability

This will be done through the analysis of the data collected and the mapping of the conditions on the ground against the literature and other experiences in similar environments, the authors will be able to validate the reliability of information collected.

CONCLUSION

As a result of the importance of having more successful implementation of eGovernment within developing nations, many nations are focusing on having an eReady society. This is done by enhancing the information and communication technology infrastructure capacity and availability to citizens. In addition to that, governments are raising the digital literacy level for citizens. However, these efforts did not allow governments to achieve their designed targets. This might be due to the low level of trust citizens have with regard to eGovernment. This research will try to answer how we can get more successful eGovernment within developing nations by identifying the needs of the community and by focusing on more in-depth issues that relate to eGovernment other than the information and communication technology infrastructure.

REFERENCES

Accenture (2004) E-government Leadership: High Performance, Maximum Value, Accenture, www.accenture.com (website) last accessed 29 September 2005.

Table 2. Questionnaire structure

Part one: Covering the use of services, how it was requested (using traditional or online technique); how cultural factors such as awareness, resistance to change and trust of eGovernment affect the use of eGovernment. Trust of eGovernment focuses on citizens' perceptions of receiving services online (testing of how they perceive security, privacy, credibility and quality)
Part two: Measuring eReadiness components within the community which consists of ICT infrastructure, ICT usage, human capital and ICT regulation
Part three: Measuring the usage of online government services
Part four: Providing personal information on respondents as the research aims to target different classes of people

- Bakry S (2003) Toward the development of a standard e-readiness assessment policy, *International Journal of Network Management*, No.13, pp 129-137.
- Bridges (2001) Comparison of E-readiness Assessment Models, www.bridges.org (website) last accessed 20 May 2004.
- Bridges (2002) E-readiness as a Tool for ICT Development, www.worldbank.org (website) last accessed 20 May 2004.
- Center for International Development - Harvard University (2003) Readiness for the Network World: A Guide for Developing Countries, <http://cyber.law.harvard.edu> (website) last accessed 10 September 2005.
- Darwish M (2003) E-government in Egypt is on its way, www.arabicnews.com (website) last accessed 26 January 2004.
- Denscombe M (1999) *The Good Research Guide for Small Scale Social Research Projects*, Open University Press, Buckingham, UK.
- Economist Intelligence Unit (2005) The 2005 e-readiness ranking, *The Economist*, <http://graphics.eiu.com> (website) last accessed 3 October 2005.
- GeoSINC International (2002) E-readiness Guide: How to develop and Implement a National E-readiness Action Plan in Developing Countries, <http://www.apdip.net> (website) last accessed 5 October 2005.
- Information Decision and Support Center (2005) Egypt information portal, Population 2003/2004. www.idsc.gov.eg (website) last accessed 30 September 2005.
- Information for Development Program (2001) E-readiness as a Tool for ICT Development, www.infodev.org (website) last accessed 30 August 2005.
- McConnell International with World Information Technology and Services Alliance (WITSA) (2000) Risk e-business: seizing the opportunity of global e-readiness, www.mcconnellinternational.com (website) last accessed 20 September 2005.
- Ministry of Communications and Information Technology (2005) Egypt Information Society, White Paper, www.mcit.gov.eg (website) last accessed 3 October 2005.
- Modernizing Government (1999) Stationery Office, UK
- OECD Development Assistance Committee (2001) DAC List of developing countries, www.oecd.org (website) last accessed 20 March 2005.
- Radwan R (2001) *The electronic government challenges and opportunities*, Cairo university, Faculty of Economics and Political Science – Public Administration Research and Consultation Center.
- Sayed F (2004) *Innovation in Public Administration: The Case of Egypt*, UNDESA.
- Egyptian Information Society Initiative (2005), EISI Government Team Report.
- World Bank Group (2005). <http://devdata.worldbank.org> (website) last assessed 1 October 2005.
- United Nations Department for Economic and Social Affairs (2003) E-government Readiness Assessment Survey, <http://unpan1.un.org> (website) last accessed 22 November 2004.
- United Nation Online Network in Public Administration and Finance (2004) *Guiding Principles for Successful E-government*, <http://unpan1.un.org> (website) last accessed 18 April 2004.
- Yin R K (2003) *Case Study Research: Design and Methods* 3rd Edition, Sage Publications, Thousand Oak, CA.

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