e-Government in Saudi Arabia - An Empirical Study

Mohammad Yamin[1] and Rawan Mattar[2]

Abstract - In light of the growing popularity of E-governance, service providers should continuously assess their role, challenges and satisfaction levels of their services to the citizens. For improving the services to the citizens, organisations also need to continuously update their technologies and measure the impact of the new technologies. As the E-governance is dependent on internet and information technology, success and failures can partially be attributed to the enactment of the government policies in the provision and proliferation of these technologies. In this article we discuss the issues, obstacles, impact and evolution of technology concerned with the customers and service providers. We shall also analyse the effectiveness of the role of the Saudi government in provision of E-government services to citizens in Saudi Arabia. Our conclusions are drawn from a survey to measure the impact and effectiveness of E-government on the service levels on west coast of Saudi Arabia. Here we shall present an analysis of this survey and draw some conclusions, which may be relevant for the entire Middle East and other regions with similar prevailing circumstances.

Index-Terms – e-Government, Internet, Technology, Service Providers, Satisfaction Level, Citizens

1.0 INTRODUCTION

The purpose of this study is to identify the extent of improvements in the performance and quality of the E-government service delivery in Saudi Arabia. In this report we also study some other services which are affected by intervention and application of E-government policies in the Kingdom of Saudi Arabia (KSA). Our study also tries to determine implications of the e-Government to other business sectors in the KSA. In this paper we outline obstacles and hurdles in the way of the E-governance. During this study, we have conducted an extensive survey of ninety five business organizations in Jeddah, which is a business centre on the west coast of Saudi Arabia. This survey was conducted to achieve the purposes of the study and answer the key questions of our hypothesis.

[1]Department of MIS, Faculty of Economics and Administration, King Abdulaziz University Jeddah, Saudi Arabia myamin@kau.edu.sa
[2]Department of MIS, Faculty of Economics and Administration, King Abdulaziz University, Jeddah, Saudi Arabia, roritaaa_00@hotmail.com

E-government is known by several names. For example it is known as electronic government, e-gov, digital government, online government, or connected government. E-government is provided through digital interactions between a government and citizens (G2C), government and businesses/Commerce (G2B), government and employees (G2E), and also between government and governments /agencies (G2G). For details see, [1]. For a comprehensive study of the framework in which E-government operates, see [2]

In this study, we have followed a descriptive method which we believe is suitable to the nature of our research. Our questionnaire is used to collect responses to fulfil our objective. Upon receiving responses to our survey from business organizations, we have carried out a thorough analysis of the results. Our analysis shows the importance of E-government role in improving the performance of organizations. The analysis shows a reduction in the cost of completion of business transactions, as well as the ease and speed of service delivery. Our analysis concludes that the e-Government provides a non-compromising, privacy controlled and cost effective way of conducting business. We have also concluded that companies must not solely rely solely on government. During the course of this research, we have become aware that E-government is transforming the citizen service system in a satisfactory manner despite the fact that there are complexities in the technology and provision of fast internet. The government systems require deep and careful study of all the elements before a full description of their services and applications of all the services can be provided. This can be a future project for someone to take on to.

E-government in the first place emerged as a result of internet. In particular Web 2.0 with a fast speed internet has enabled governments and organisations to provide many online applications, e-Government being one of them. Through E-government, municipal, local and central governments of many countries in the world seek to win the confidence of their citizens by providing fast and efficient services to them. Given the availability of very fast internet through fibre optics, E-governance has attained a resounding success in many countries. In almost all developed countries, E-government dominates the way in which the service provision to the citizens of countries. Of course, E-governance is not only a faster way of service delivery but also removes the red tape which earlier existed to a degree in most of the countries. In the developed regions of the globe, it would be fair to say that the E-governance has become a benchmark of service provision to the citizens. In view of [1], E-government is considered as an integrated philosophy and a radical shift in the realm of public administration at both the theoretical and practical levels. It is also a quantum leap and a peaceful revolution in the concepts,

theories and methods so that it reflects positively on the overall picture of the government administrations i.e. it cancels the traditional perception embodied in the over routine, authoritarianism, nepotism and other forms of negative practices which accumulate in the minds of the people and harm their relations with government bodies.

In last decade a number of national e-Government standards have been developed in North America, the European Union contraries, Australia, and some developing countries. Although developing such standards is a big step towards E-governance, it doesn't suffice to ensure smooth, effective and meaningful services. In this paper we provide results of a quantitative empirical study on the effectiveness and improvement in the field of e-Government service delivery in the Kingdom of Saudi Arabia. Our study finds a relationship in the awareness acceptance levels of the Saudi E-governance. Our report conclusions are drawn from the survey that we have administered on the west coast of Saudi Arabia and in particular the city of Jeddah, which is the second largest city and the largest port city of Saudi Arabia.

In light of the growing interest in the Internet, especially the growth of fibre optics cables in provision of very fast speed internet, and the enhancement of information technology, it was natural to make use of these technologies to serve all areas of life and facilitate better services through e-Government. In light of these developments, it was necessary for many countries of the world which benefit from these technologies, to remove age-old and inefficient management processes. There has been a serious attempt by the government of Saudi Arabia to achieving this objective. For details, see [3].

2.0 LITERATURE REVIEW
Here we shall present some results from earlier studies on e-Government and its proliferation into the Saudi Arabia, which is also known as the Kingdom of Saudi Arabia (KSA).

2.1 Saudi Arabia
Saudi Arabia is the largest exporter of petroleum products and is a member of G20. Land area [4] (Saudi Arabia, of the KSA is approximately 2,150,000 km^2. Its population according to 2010 census [5] is about twenty seven million, which includes eight and a half million expatriates providing technical and general support to this oil rich country. A large percentage of the KSA is occupied with deserts and mountains, making the delivery of civic and civil service delivery very difficult. Saudi Arabia is a well-known religious country, which makes many people to think that it is a conservative country. In particular, some regard the woman of Saudi Arabia in veil such as in Fig 1 as being deprived of social justice. The reality is quite the opposite and in fact Saudi Arabia is a very vibrant country tuned with the modern education and technology, providing equal opportunities for men and women. The government on the other hand ensures that the women of this country get equal share of opportunities. For details, see [6].

Figure 1: A Saudi Women in veil

Saudi Arabia also houses Kaaba which attracts millions of pilgrims every year. The hajj is a worldwide well known pilgrimage in which people from more than two hundred countries take part. Yamin [7, 8, 9] has extensively studied hajj and other crowded events.

2.2 Saudi Legislation for e-Governance
Since the inception of E-government, the Kingdom of Saudi Arabia (KSA) has taken considerable interest to acquire infrastructure required for implementing the service. Indeed the KSA has since switched off to E-government, and is also facilitating internet services to the organizations and citizens to learn and use its E-government service delivery. The KSA is one of the few countries who have acquired Fibre Optics internet infrastructure and using it since 2011. This has provided a great opportunity and has benefited the national economy.

In order to facilitate smooth e-Government services, Saudi Arabian government has enacted several laws through royal decrees. The important legislations in this regard are as follows:
(a) Royal Order Decree No. (7/ B/2427), dated 16/1/1424. In this order the Ministry of Finance was authorised to proceed with the establishment of E-government program.
(b) Royal Decree No. (7/ B /33181), which provided approval to the Ministry of Information Technology to implement E-government policies in Kingdom.
To highlight the importance of the transition to the information society, and to achieve the desired objectives of e-Government, the Ministry of Communications and Information Technology in the year 2005, launched an E-government Program known as Yesser with the participation of the Ministry of Finance, and the Communications and Information Technology. In order to implement the services, a supervisory committee was instituted to monitor the implementation of E-government. For details see [3]. The measures of this committee included the following:
(a) Make adequate arrangements for isolation of pilgrims found to be carrying communicable diseases

(b) Introduce mandatory health awareness classes in all countries with the help of local authorities to be sponsored by tour operators of the event

(c) Punish tour operators for noncompliance of health procedures

2.3 Reasons for shift towards e-Government

The reasons for the shift towards e-Government can be classified as follows [3].

1. Acceleration of technological progress and its associated cognitive revolution
2. Trends of globalization and interdependence of human societies
3. Democratic shifts and their accompanied changes and popular expectations
4. Responding and adaptation to the requirements of the surrounding environment

Saudi Arabia's neighbouring countries are also very active and alert to the needs of providing e-Government services. The United Arab Emirates (UAE) which once was well known for its oil exports today has a diverse and highly developed economy. According to the UAE Economic Report 2015 [10] and [11] released by the UAE Ministry of Economy, the non-oil sector contributed 71.6 per cent to the UAE's GDP, compared to 66.5 per cent in 2008 [3]. In the quest to modernize and be a world first nation, the UAE has invested generously and aggressively for adopting and implementing Information and Communication Technology (ICT) in its government and private sectors. The Global Information Technology Report 2010-2011 indicates that the UAE leads the Middle east and north African (MENA) region in leveraging ICT for increased economic diversification and competitiveness. More studies of the regional e-government in Saudi Arabia and neighboring countries can also be found in [12] and [13].

E-government provides many advantages to a large section of the society, irrespective of the region and country. Many researchers including [12], [13] and [14] have extensively studies the various aspects of E-government in general and pertaining to particular regions and nations. In view of these studies, E-government is providing many advantages and benefits. These benefits flow onto local private organizations including Small to Medium Enterprises (SMEs), which are considered to be backbone of economies of many countries. Some of the benefits are as follows [3]:

1. Services more related and responsive to the needs of the masses.
2. Comprehensive services and lower costs.
3. Reducing reliance on paperwork.
4. Improving means of access to information.
5. Lower administrative costs with respect to commercial transactions of the government and the private sector.
6. Transparency in dealings.

7. Better development of governments so that they become more closely related and responsive in addition to easier access to them.

2.4 Achievements of e-Government

One of the most remarkable achievements of e-government is remove the direct contact between the client and the service provider. This results in reducing the bias which exists in the society. The problems of direct and face to face contact sometimes results in racial, cultural, religious, and colour discrimination. There are many researchers, including [3], who have studied and commented on the achievements of E-government in the Arab World. Here we present a summary of various studies. We know that as the technology refines and develops, awareness and expectations also increase. In the near future we are like to see a significant refinement in the provisions of e-government. Various studies, like that in [13], suggest that we are likely to witness phenomenal expansion of electronic services, especially in the developing countries. However there is still a long way to go.. There still is a considerable gap between the employees and the government service, which calls for proper training in order to provide services efficiently. There appears to be a lack of interactive or inefficient for clients in communications through their networks. But the e-government results in

1. Increase of electronic documentation and hence a huge reduction in the amount of paper based documents and records
2. Direct and parallel interaction between the government as a service provider and citizens
3. Massive data and information flow between the government and citizens
4. A very welcome transparency and speed of service delivery
5. Equity and justice in provision of the same service and same costing for everyone, free of favouritism.
6. Simplicity and easy of access to the services
7. Ubiquitous services based of telecommunications networks, enabling mobile and distant service delivery in a timely manner.

The Saudi government is also been providing many incentives to the private sector through government linked environment. This enables delivery of services do different cultural environments and societies found in the different regions of the nation. As we know that Saudi Arabia's large areas are classified as deserts and hence the government is making efforts to reach to the distant continuities found in these deserts.

2.5 Local Saudi Arabian Problems and Solutions

As we would expect every region and country has specific advantages and complexities - so does Saudi Arabia. Here we list some of the complexities that Saudi Arabia faces in the way of providing services to the citizens of this nation.

(a) Confidentiality, Privacy and Security, as in case of many developing countries, are issues of concern in the E-governance. These issues are generally resulted from

social and cultural inclinations of countries. For example, privacy and security mechanisms are found to be weaker and sloppy in may many developing countries. However, we should expect improvements in these mechanisms gradually as the technology and service mature

(b) Funding cuts are seen everywhere in the world and Saudi Arabia is also not spared. Lack of funds, depending on the extent, can potentially derail the whole E-governance program.

(c) A high unemployment rate can slow down the implementation and progress of E-governance programs. This, like in many developing countries, also prevails in Saudi Arabia. However, the Saudi government has in the recent times initiated several measures and programs to address the high unemployment in the nation. One of the formidable programs is known as Saudization [15], which makes it mandatory on various organizations and sectors to employ certain minimum percentage of Saudi nationals in their works fore. Steps , may slow down the progress of E-governance

(d) Lack of training and support may be detrimental for many employees overseeing day to day operations of E-government service delivery. It is true that many in the developing countries are investing very little in on Training Programs. As a result, the employees sometimes do not treat their customers in a satisfactory manner. The Saudi government and the organisations linked to the E-government need to provide adequate training to their employees.

3.0 THE SURVEY
To measure the level of E-Government services and their effectiveness, we designed an appropriate survey. This survey was completed online by customers who avail these services. Many of the customers include business organisations. In these cases, the survey was completed by responsible staff members of these organisations. However, our survey was limited to the west coast region of Saudi Arabia. But this region includes Jeddah, the second most populous and commercial port city of Jeddah. We used social media to get responses of the survey, which expedited the responses. However, there was a lack of written information regarding the name, title and organization name and location of the organization in some cases.

3.1 Ethical Considerations in our Survey
The aim of this survey was to receive personal and organisational responses from responsible individuals who utilize E-Government program in Saudi Arabia. Therefore, we didn't really require any access to personal information, which always is a sensitive issue. We only asked general questions personal nature such as name, job title, company name and location of the company. Moreover it was categorically stated that this information will only be used for the purpose of the research and their personal information wouldn't be made public.

3.2 Survey Questions
Apart from general questions, there were ten main questions. These questions were designed to have responses on a Likert scale of seven indicators, 1 to 7. The meanings assigned to the numbers were as follows: 1 = completely disagree, 2 = disagree, 3 = somewhat disagree, 4 = neutral, 5 = somewhat agree, 6 = agree, 7 = absolutely agree. Having a broad scale of seven choices was designed to provide the respondents with a greater flexibility. We present our questionnaire in table 1 and the accumulated average of legal entries is presented in table 2.

Table 1: Survey Questionnaire

No	Question
1	Do you use the official website of the Organization of the Kingdom of Saudi Arabia www.saudi.gov.sa to complete government transactions?
2	Is the government contributing to the use of electronic transactions towards the completion of the organization work efficiency?
3	Does the use of E-government help to make the completion of government transactions more quickly?
4	Does the use of E-government help you or your organization make the completion of government transactions easier?
5	Do you consider the use of E-government secure?
6	Do you or your organization completely depend on completion of your tasks by the E-government provision?
7	Have the costs of completion of transactions have come down in the organization after the introduction of E-government services?
8	Is the E-government is improving the performance of the organization as a whole?
9	Are you satisfied with the provision of E-government?
10	Do the E-government services require to be improved?

3.3 Survey Analysis and Results
After carefully analysing the survey responses from the 95 companies, a statistical analysis was conducted. The averages of responses to survey questions are provided in Table 2. Based on analysis of the survey results, we have drawn the following conclusion.

Table 2: Survey Results

Question	Average Response	Question	Average Response
Question 1	1.86	Question 7	4.1
Question 2	4.3	Question 8	4
Question 3	4.4	Question 9	4
Question 4	4.4	Question 10	4.3
Question 5	4.1	Question 11	4.7
Question 6	4		

4.0 CONCLUSIONS

We have local knowledge of the people and organisations in Saudi Arabia. This combined with a careful study and observations of the survey results and their analysis, has produced the following conclusions.

1. There is high demand for the use of e-government portal, and there is significant awareness of the importance of e-government.
2. Use of e-government and hence completing various transactions electronically increases the efficiency of the organizations.
3. The use of electronic government is helping to achieve efficiency in completion of government transactions in a timely manner.
4. The use of e-government organization is helping the completion of government transactions more easily than otherwise.
5. Many organizations believe that the use e-government is secure.
6. Many civic and civil services rely on e-government, depending partly, not necessarily fully.
7. There is significant reduction in the cost of completion of transactions in the e-government organization as compared to non e-government methods and services.
8. E-government is improving the performance of the organization as a whole.
9. There is a need to improve, develop and expand on many other aspects, as there is a perceived lack of user satisfaction amongst the users of e-government.
10. E-government is has attained a level where the government cannot afford to neglect.

From the above conclusions, we infer that e-government in Saudi Arabia is growing in popularity every day. It is providing a platform of equal and adequate opportunities for men as well women. It is being more useful and applicable for disabled, old and, sick and women of the country. Now there is an expectation of efficiency and ease in accessing government and non-government services which is fulfilled by e-government and its ensuing policies and methods flowing into the private sector. Now governments throughout the world cannot afford to have a blind eye towards providing e-government services. Those who are already providing, such as Saudi Arabia, need to continuously update their technology, systems and environment.

5.0 FUTURE STUDY

We have conducted our study involving only the organisations in the city of Jeddah. Although, Jeddah is the business centre and the largest sea port of Saudi Arabia, but still it cannot represent whole of Saudi Arabia, which has many regions which significantly differ in many ways from each other. Hence the results on e-government satisfaction are far from being complete. Therefore, as a future study, it is de4sirable to conduct a national survey of many organisations and individuals by taking samples from each region, city and locality. We shall return to carry out further study of E-

government in Saudi Arabia in particular and the technology itself in general. There are many aspects of E-learning which would get more attention as the time passes. There are many developing countries which are yet to introduce E-government in their jurisdictions.

REFERENCES

[1]. Overview of Yesser e-government Program, [online], Available from: http://www.yesser.gov.sa/ar/Program Definition/Pages/Overview.aspx (last accessed 31 October, 2015)
[2]. European commission, e-Government benchmark Framework 2012-2015,[Online}, Available from: https://ec.europa.eu/digital-agenda/sites/digital-agenda/files/eGovernment%20Benchmarking%20method%20paper%20published%20version_0.pdf, Last accessed 22 January 2016
[3]. Alsalloum, Othman Ibrahim, The Impact of Applying E-Government to Improve the Performance of the Ministry of Education in Saudi Arabia, An Master's Thesis submitted to Department of Management Information Systems, King Saud University, November 2011
[4]. *Wikipedia, Saudi Arabia, [Online], Available from: https://en.wikipedia.org/wiki/Saudi_Arabia. Last accessed 22 January, 2016
[5]. Wikipedia, Demographics of Saudi Arabia, Available from: : https://en.wikipedia.org/wiki/Demographics_of_Saudi_Arabia, Last accessed 22 January, 2016
[6]. Yamin, M. (2015), A Socio-Cultural Overview of e-learning in Saudi Arabia, International Woman Online Journal of Distance Education, International Women Online Journal of Distance Education, July, 2015, Volume: 4 Issue: 3, ISSN: 2147-0367
[7]. Mohammad Yamin, Secure and Healthy Hajj Management: A Technological Overview, American Academic & Scholarly Research Journal, Vol 7, No. 3, May 2015
[8]. Yamin, M. (2015), Health Management in Crowded Events: Hajj and Kumbh. BIJIT - BVICAM's International Journal of Information Technology, 7 (1), 791-794
[9]. Yamin, M. & Albugami, M. A. (2014), An Architecture for Hajj Management, Service Science and Knowledge Innovation
[10]. Bank Audi, UAE Economic report http://www.bankaudigroup.com/GroupWebsite/openAudiFile.aspx?id=2485
[11]. Wikipedia, E-Government in the United Arab Emirates, [Online], Available from https://en.wikipedia.org/wiki/E-

Government_in_the_United_Arab_Emirates, Last accessed om 22 January 2016.

[12]. A.M. Al-Khouri, and J. Bal, Electronic Government in the GCC Countries, World Academy of Science, Engineering and Technology International Journal of Computer, Electrical, Automation, Control and Information Engineering Vol:2, No:5, 2008

[13]. Ali M. Al-Khouri, e-Government in Arab Countries: A 6-Staged Roadmap to Develop the Public Sector, Journal of Management and Strategy, Vol. 4, No. 1; 2013

[14]. A Taleb-Bendiab, John Moores, Kecheng Liu, Philip Miseldine, John, Moores, Shauneen Furlong, John Moores, Weng Rong, Process-aware e-Government Services Management: Reconciling Citizen, Business and Technology Dynamics: A Research Note, European and Mediterranean Conference on Information Systems (EMCIS), July 6-7 2006, Costa Blanca, Alicante, Spain

[15]. Wikipedia, Saudization, [online], Available from: https://en.wikipedia.org/wiki/Saudization (last accessed 12 January, 2016)