

E-government in Saudi Arabia: Barriers, Challenges and its Role of Development

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ABSTRACT

This paper introduces some basic knowledge regarding to e-government, which includes, the needs of society, development of e-government, and basic e-government concepts. The main objective of this research study is to illustrate some international development experiences to understand the benefit of e-government. Such experiences may serve as policy guidelines to the successful implementation of e-government to ensure overall development in Saudi Arabia. The study introduces the factors that determine the performance of e-government, and effective suggestions that help for improving e-government performance in K.S.A. The paper will conclude with quantitative analysis of responses obtained from a survey and questionnaire of some citizens and employees in public sector in Saudi Arabia.

Keywords

E-government, information and communication technology, e-government challenges, e-government development, e-government performance.

1. INTRODUCTION

Electronic government (or E-government) represents a strong challenge in all public sectors; this will be done by changing structure, culture and ways of conducting business by utilizing the potential of information and communications technology (ICT) as a tool in the government organizations. It fundamentally change the way public services are delivered and managed. Now most governments are introducing e-government as a mean of reducing costs, improving services for citizens, increasing effectiveness, and increasing efficiency in the public sector. As a result we can consider the e-government as one of the top priorities for governments across the world. The use of e-government in Saudi Arabia caused a radical change within government transactions and about the relationship between a government and its citizens. E-government was introduced in the field of public administration in the late 1990s, though it has not been clearly defined and understood by scientists and Experts of public administration. The term e-government created by analogy to the concepts and practices of E-Commerce (electronic commerce) applied to the public sector, referring to the delivery of government services to the public 'on-line' (typically over the Internet) or to the technological infrastructure required to deliver those services. E-

government denotes the strategic, coordinated use of information and communication technology (ICT) in public administration and policy decision-making. According to World Bank, e-government means to governmental use of information technologies (such as, WAN), the Internet, and Mobile computing) that have ability to transform relations with citizens, businesses, and other agencies of government. The World Bank definition indicates the areas of operation of the concept and also determines the broad benefits accruing out of this utilization of ICT to the field of governance, namely, to promote citizen empowerment, improve service delivery, strengthen accountability, increase transparency, or improve government efficiency [1].

E-government has attracted the attention of politicians, scientists, and statesmen of the world in the recent years, and hence has been extensively approached by governments in many countries, many of whom have devoted considerable efforts and resources for its implementation. This approach is multidimensional and can target for various sets of goals and objectives. Responding to the increasing expectations of society, which now expects more than the delivery of basic services, is a widely adopted view in e-government programs.

E-government strategies in developing countries should first target the improvement of their operations and processes and also the level of government's ability to cooperate. This new position for the world governments is now referred to as good governance. Conceptually, e-government is the central ring of linking the strategy, process, organization, and technology so as to provide effective procedures for interest groups to perform in a timely manner and make more information available. Therefore, the successful establishment of an effective e-government is directly dependent on organizational change.

The paper is organized as follows: in section two we present a survey and a literature review for e-government. In section three we describe the e-government partners. In section four we briefly introduce e-government benefits, objectives, vision, and strategies in KSA. In section five we introduce the factors affecting the success of e-government. In section six we present our research methodology, data analysis and discussion. In section seven we introduce our recommendations. The paper finally concluded in section eight with conclusion and future works.

2. LITERATURE REVIEW

Development of an e-government is a complicated task both technically and politically. The quality of an e-government depends on many factors, critical among these are the government's information policy, the number of users and their educational level, and motivation. Up to now, no country has successfully met all the requirements necessary for an ideal form of e-government. Based on this viewpoint, a customized approach to the development and implementation of e-government is needed to satisfy the prerequisites for its success [2].

E-government, understood as public sector use of contemporary information and communication technology (ICT) to boost information dissemination, enhance service delivery and facilitate citizen participation in governance, is rapidly spreading beyond its initial heartlands in the developed world to reshape public sector operations in developing countries. Furthermore, it is in these parts of the globe that some of the greatest hopes for governance transformation are held out. In consequence, international agencies are now paying considerable attention to the development potential of e-government [3].

E-government is the provision of information and services provided by governments to citizens, using a range of information and communication technologies. It is based on technology innovation in management, since information technology is relevant to all areas of government, and IT professionals are in high demand. An E-government project can be technically complex, and involve many parties ranging including customers, financiers, engineers, and regulatory authorities. Many argue that digitizing government will be the best way forward to a better and more efficient service to the public. They often fail to realize that technology mismanagement and selection could hamper the government's grand visions [4].

Most researchers agree that e-government can only be a positive step towards making the lives of citizens easier, but the idea of an e-governance system that allows citizens to feel truly empowered in shaping the services they need might be regarded still as a utopia. The traditionally large, slow-moving mechanisms that characterize the state in most countries are not the most adaptable of institutions and it is likely that some will have to be dragged 'kicking and screaming' into the 21st century. It is the job of those organizations charged with implementing and activating e-government, to provide citizens with smooth, practical and attractive access to services and to begin to enable the kind of communication and interaction that will galvanize public awareness and place some of the power back in the hands of citizens, firms and all types of nongovernmental organizations.

There is no universally accepted definition of the e-government concept, however, the term '*e-government*' focuses on the use of new information and communication technologies (ICTs) by governments as applied to the full range of government functions [6]. The Council of Europe issued the following definition of e-governance. "*E-governance is about the use of information technology to raise the quality of the services governments deliver to citizens and businesses*". It is hoped that it will also reinforce the connection between public officials and communities thereby leading to a stronger, more accountable and inclusive democracy. E-government and e-governance are about providing citizens with choice, not only choice as to how they want to engage in interaction with public administration but

on when and as they wish. Public opinion should be capable of helping to shape the way bureaucracy deals with providing services and the process should be a continuous evolution that adapts to the shifts in the needs of both government and citizens, as well as the technological advancements that may help the smooth running of both local and central government dealings with the public [5].

Gonzalez et al. presented that, the sophistication and availability of online public services shows that efforts are being made to develop e-government by countries in this part of the world [7]. The analysis conducted, reveals that progress is present in transition economies, though there is still room for significant improvements in demanding future period [8].

The Internet has offered the opportunity to all public sector organizations, including Local Government Councils (LGC1), to modernize and achieve citizen-centered services through cohesive policies and programs that join-up service delivery across local government. Although many countries have now successfully implemented e-government, in most countries the focus of e-government has been to enable existing front office processes in their current state without significant improvements or efficiency gains. Consequently, many of these governments are now embarking on the transformation of their internal inter departmental and external inter organizational business activities through utilizing various ICTs. In Europe, the governments in developed economy countries (DECs) are pursuing a far-reaching and ambitious program of innovation and radical change in the public sector aimed at transforming services. On the other hand, transition economy countries (TECs) such as Slovakia in Eastern Europe have started somewhat less ambitious initiatives to improve public services that are very much focused on ICT enabled incremental change as part of their national agenda for public sector transformation [9].

3. E-GOVERNMENT PARTNERS

According to, all previous definitions for E- government we are noting that there are several partners with E-government in its process including two internal and external partners, each of them able to benefit from these services those partners are [10]:

3.1 Government to citizen (G2C)

This service delivery category focuses on the ability of the government and citizen to communicate information to each other in an efficient and electronic manner. The citizen greatly benefits from these government communications. One of the most popular benefits of G2C is the simple posting of forms and registrations that were previously only available to those who were willing to wait in long lines or wait for forms to be mailed to them. Other benefits to serve citizens are the improvement of education information, prison security, and e-voting [11].

3.2 Government to business (G2B)

G2B model E-Government is the E-Government between Government and Business. Government provides all kinds of social services through network, and enterprises can apply for these services through E-Government[12]. On organizational level, there are four main factors which may influence the enterprises to use G2B model E-Government. They are organizational readiness, management readiness, demand satisfaction and credibility [13].

3.3 Government to government (G2G)

This category of delivery strives to improve the efficiency of delivery when transacting information within itself or with other governments. This allows the government to communicate efficiently by eliminating redundancy and duplication. This also has benefits in terms of crime detection and homeland security. Examples of this quadrant would be intergovernmental cooperation, development of emergency response systems, and linking of law enforcement agencies [11].

4. E-GOVERNMENT BENEFITS, OBJECTIVES, VISION, AND STRATEGIES IN KSA

There are several *benefits* for e-government programs; any country is looking for achieving these goals or benefits in order to serve all partners in the countries. These benefits are summarized as a following [14]:

- I. Cost reduction and efficiency gains: through using all internal and external services online that means decreases the processing costs of many activities as well as will increase the government efficiency.
- II. Quality of service delivery to businesses and customers: E-government mean to enable access to all services by using the internet, as well as services online will enhance reducing the bureaucracy process inside the government, improving the procedures and offering fast and convenient transactions.
- III. Increase the capacity of government: E-government aims to use ICT tools to support organizations to organize their work inside and outside the organization, leading to greater efficiency, effectiveness and further improve the type of services provided in the public sector or the business sector, as well as assistance in making decisions.
- IV. Network and community creation: E-government is seeking to create an atmosphere of interaction between all partners in e-government through the exchange of information on a network and an integrated and harmonious community.

There are a set of important *goals*, any E-government program aims to reach to these goals, and some of these goals are summarized as a following [15]:

- Raising the public sector's productivity and efficiency.
- Providing better and more easy-to-use G2C services for individual citizens and G2B for business customers.
- Increasing return on IT investments.
- Enhancing the integrity and readily access of government data.

KSA e-government program includes three main *projects* [15]:

- *E-payment gateway*: It aims to facilitate electronic payment between governments to business, business to business as well as payments between government and citizen.
- *Smart card*: It is a digital system or chips aims to store all citizens' data by using thumb prints such as an ID card, health and driving records.
- *MOI*: it is a portal in which the citizens can obtain identification cards and passports as well as the driving license and any certificates may be required by citizens.

KSA has been keen to adopt and activate communication and IT systems in order to realize an IT community and a digital

economy, besides higher levels of prosperity and welfare to the citizen and the expatriate alike. In order to achieve this vision, KSA has taken successive steps to develop business process and disseminate the concept of e-services in various government agencies, as shown in Figure 1. In order to realize the above objectives, KSA adopted a set of promising ambitious plans and strategies. The e-government Program has been assigned the task of developing and implementing these plans and strategies in cooperation with government agencies. The First Action Plan from 2006 to 2010 has been completed. Now we are in the process of launching the Second Action Plan from 2012 to 2016 [16].

E-Government Second Action Plan Goals: realization of the e-government vision is supported by a set of goals distributed into the methodology of the four balanced performance strategies which are taken as a benchmark to measure the Second Action Plan progress [15, 16].

Firstly: Education and development perspective goals:

- Training and preservation of skilled and efficient e-government resources.
- Promote initiative and leadership within ministry departments, government agencies and executives interested in e-Government.
- Instill quality performance culture among e-Government resources through performance and achievement oriented HR management.
- Increase e-Government awareness level at various government agencies.
- Entrenchment of e-services and exchange of knowledge with respect to e-Government services.

Secondly: Business process perspective goals:

- Ensure efficient organizational environment for processing and performance measuring of e-Government services.
- Risk management to ensure successful deliverables..
- Establish standard business processes and standardization of data sources.
- Develop e-Government channels to meet customer needs.
- Enhance communication from government agencies to the public.
- Enhance service delivery performance based on standard practices and customer interests.
- Upgrade government agencies service delivery practices by developing interdepartmental business processes and adopting e-services.
- Maximize utilization of communication and IT tools in the communication process between government agencies and stakeholders (interaction).
- Research and innovation capacity building in the area of e-Government.
- Reinforce e-government procurement management in government agencies.

Thirdly: Customer service perspective goals:

- Reduce e-service costs.
- Enhance e-services quality by offering of options, availability of service levels and access to service.
- Increase customer awareness and satisfaction about the e-services.
- Maximize customer satisfaction and utilization of e-services as a first priority.

Fourthly: Value management perspective goals(value against money):

- Reduce duplication of government investments in the communication & IT sector.
- Develop indirect value of government investment in the communication and IT sector.
- Contribute to establishing the IT community and to development and growth of the local Communication & IT sector in KSA.

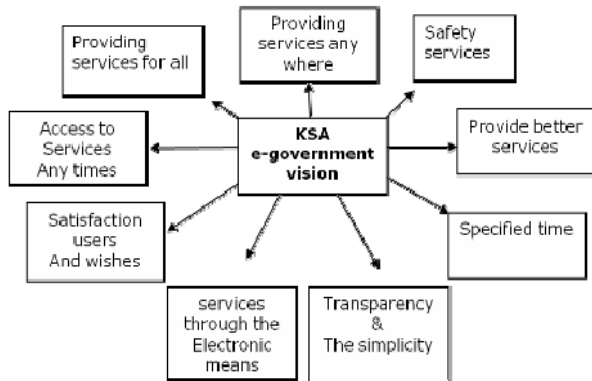


Fig 1: Saudi Arabia e-government vision [15]

5. FACTORS AFFECTING THE SUCCESS OF E-GOVERNMENT

The factors affecting success or failure of e-government have been widely discussed by several studies. In this section we introduce the most important factors and its findings.

5.1 Resistance to change to electronic ways

E-government is a new phenomenon which in the (Saudi government) work place means the transformation from manual methods of work to electronic ones. These changes will create a new advanced environment completely different to what has been used over many years in government departments. Another reason for resistance to change may be the fear of losing jobs as the organization moves to adopt the new technology [18-20].

5.2 Lack of policy and regulation for e-usage:

To be effective this technology we need supporting policy and regulation framework. Also laws and regulations should cover all applications and related functionality such as e-payments, e-mail usage, copyright rules, e-crimes, e-business, e-commerce and others. The existence and effectiveness of these laws will give all users more confidence and assurance to use e-applications and recommend others to use them [18].

5.3 Lack of partnership and collaboration

The sharing of information, experiences and plans between various governmental agencies and organizations is a crucial phase in the adoption of e-government processing. Each organization has its own data and information which it has to protect and keep safe but by using security tools with intranet and extranet applications it will become easy to share information especially with other governmental agencies safely and securely [18].

5.4 Lack of strategic planning

E-government projects are huge, costly and long term projects that therefore require a clear strategy and vision. So, it is important for each governmental agency or organization to develop its own strategic plan that is aligned with the national ICT plan and its vision. Efforts can then be united toward uniform e-government systems readiness in a specific time frame aiming for the highest performance services [18].

5.5 Financial Barriers

The most serious and significant barrier to the implementation of e-government is a lack of money. The financial barriers include the following three identified obstacles: limited financial spending on ICT, high cost of ICT and high-priced services of telecommunications [18, 21, 22].

5.6 Lack of qualified personnel and training

Lack of IT professionals and required computer training courses is a major issue. There is importance needs of investing in training of existing staff members because they have strong workplace knowledge that will help them integrate the use of e-government services and applications [18, 23].

5.7 Lack of programs to promote e-government benefits and advantages:

Promotion is one of the most significant factors of successful e-government systems. For any new technology there are many steps to convince and encourage people to use it, and adopt it, so government sponsored promotion and advertising will be a significant aid to accomplish this task. The lack of programs to promote the e-government services benefits and advantages is considered one of the important barriers to the adoption of e-government in Saudi society from this it suggests that the YESSER program and all governmental agencies might benefit from the execution of a campaign to raise and promote awareness of e-government and other new e-services, along with their benefits and advantages. As has effectively been executed by e-commerce a program of cross channel marketing and advertisements could promote popular and high profile online applications from any e-government portal through a range of public advertising media. This will increase general awareness, acceptance and usage of e-government services among the public [18, 24].

5.8 Culture

Overcoming cultural inertia is one of the main challenges to e-government implementation in developing countries. The issue of culture includes social characteristics, backgrounds, languages, education, religion, experiences and different expectations of the e-government system. To ensure Culture Overcoming cultural inertia is one of the main challenges to e-government implementation in developing countries [18, 25].

5.9 Leaders and Management Support

Top management support is one of the key factors in the adoption of e-government services within the government sector. Top management support refers to the commitment from top management to provide a positive environment that encourages participation in e-government applications. Around the world, effective leadership plays a significant role in the adoption and implementation of e-government. In Saudi governmental agencies the leader and top management support in Saudi public sectors is considered as one of the

main factors that can assist and support the adoption of e-government services [18, 26, 27].

5.10 ICT Infrastructure

The ICT infrastructure including networks and servers is an essential part of e-government implementation and diffusion. It enables government agencies to cooperate, interact and share work; facilitating the daily tasks and using the technology to save employee’s time and effort [18, 25].

5.11 Privacy, security and trust in e-services

Citizens want to ensure that their information and all other data are safe when they are using e-services. The indications are that governments should provide a secure access point to their online services in order to develop citizen trust. Briefly, security and trust in e-service systems seem to be a significant challenge for the YESSER program to deal with. It is indicated that an effort to address the combined technical and cultural impediments to adopting e-government may yield positive results. Practically, an increase in public awareness and education initiatives through seminars, TV campaigns, brochures, etc., may be central to public acceptance and adoption and to generate trust in the secure use of networked systems. In technical terms YESSER may benefit from the building of a comprehensive portfolio of security techniques and development of an e-transaction security framework to protect all users’ privacy and security [18].

6. RESEARCH METHODOLOGY

This research represents a study of the most common factors that have an influence and impact the e-government progress in Saudi Arabia. As part of the study, an eleven questions survey has been published for two weeks on the Internet at the URL address in [28]. The questionnaire is available on-line in the URL for citizens throughout the social network sites and e-mails to get their opinions without any personal contact. By this way we avoided what happen in traditional survey where direct contact and surrounded might influence personal opinion and mislead the surveyor and surveyed as well. Moreover, the on-line questionnaire increases the number and type of participators. We have reached about two hundred on-line participators.

6.1 THE ANALYSIS PHASE

The questionnaire is divided into two parts; The first section is the personal information such as age, level of education and his/her position) as shown in Figure 2, while the second section of the survey were the eleven questions that represent the participators opinions about the obstacles and challenges that facing the adoption of e-government services in Saudi Arabia, as shown in Table 2.

The results have shown that the most participants were aged between 20-30 years and the percentage was 47%. Also, the level of education answered was bachelor's campaign with 51.49%. And regard to their position was the most of the answers government employees, and they have accounted for 55%. Furthermore, Table (1) explains the details of each descent, we have obtained. The results showed that the lack of rehabilitation and training of staff on information technology are the most important obstacles that may face the e-government in Saudi Arabia, where the percentage reached 95%. Table (2) shows all the result that we obtained from the questions posed.

7. RECOMMENDATIONS

As a result of the questionnaire and the survey results, we have provided some recommend for the future works which include:

1. Training and qualification of staff.
2. Increase the awareness programs in order to raise awareness among citizens.
3. Increase the dissemination of strategies and vision for e-government through newspapers, advertisements and websites.
4. Support IT infrastructure in line with the vision of e-government.
5. Allow organizations and the private sector to the exchange of experiences.
6. Emphasis to all organizations from the government sector and the private sector to guide their employees to support e-government applications.
7. Emphasis on increasing the level of security and privacy of information.

Table 1. Explains the details of each descent (age, level of education and his/her position)

Age	Less than 20	20- 30	31 - 40	More than 40
	7%	47%	40%	6%
Education Level	High School	High diploma	Bachelor’s degree	Above
	16.8%	17.82%	51.94%	13.86%
Occupation	Student	Government Employee	Private sector Employee	others
	22%	55%	17%	6%

8. CONCLUSION AND FUTURE WORKS

This study introduced some basic knowledge regarding to e-government, which includes, the needs of society, development of e-government, and basic e-government concepts. The main objective of this study is to illustrate some international development experiences to understand the benefit of e-government. Such experiences may serve as policy guidelines to the successful implementation of e-government to ensure overall development in Saudi Arabia. The study introduced the factors that determine the performance of e-government, and effective suggestions that help for improving e-government performance in K.S.A. The paper concluded with quantitative analysis of responses obtained from a survey and questionnaire of some citizens and employees in public sector in Saudi Arabia.

To continue our work in the future, we will try to enhance the factors that empower and improve the performance of e-government services by developing and implementing various solutions to specific problems we have identified based on our observations and the data we have collected from the users.

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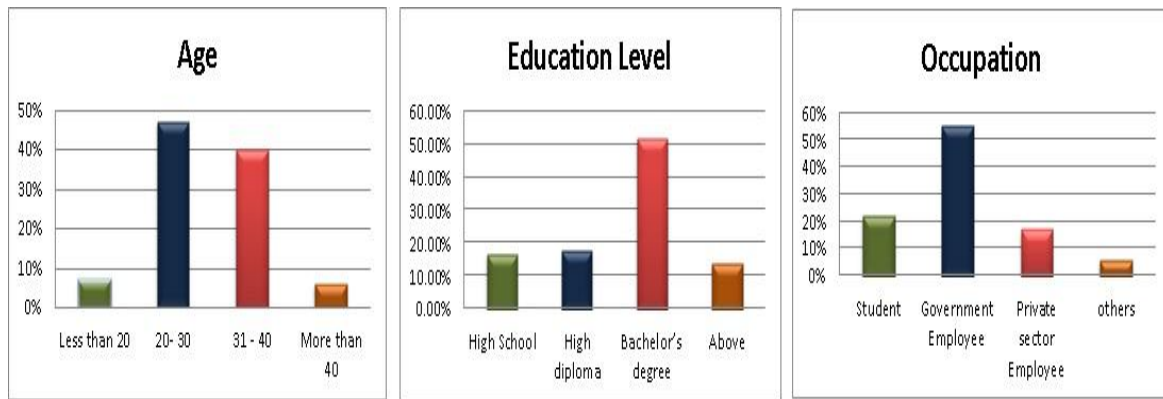


Fig 2: The personal information of the on-line participators

Table 2. The ratios obtained from the questions posed

Question	Agree	Disagree	I don't know
1. Do you think there is lack of the rehabilitation and training of staff about information technology?	95%	5%	0%
2. Do you see that there are adequate programs to educate and encourage for raise awareness of e-government?	16%	70%	14%
3. Do you think that the shift from the traditional government to electronic government will be useful and effective to serve the interests of citizens?	88%	7%	5%
4. Do you think the existing laws and policies of the government enough to make e-government applications, electronic safe?	36%	32%	32%
5. Do you think that there is enough cooperation in the exchange of information and experiences among government agencies and other organizations?	23%	55%	22%
6. Do you think that there is a strategy and a clear vision for e-Government projects?	14%	64%	22%
7. Do you think that there is sufficient financial support for the implementation of e-Government projects?	60%	17%	23%
8. Do you think that the IT infrastructure sufficient to support e-government services?	27%	57%	16.83%
9. Do you see that information security is enough in e-government applications?	36%	43%	21%
10. Do you see that there is sufficient administrative support to provide positive environment are encouraged to participate in e-government applications?	36%	49%	15%
11. Do you think that the social culture and education sufficient to meet the challenges of e-government?	54%	34%	12%