

## **TECHNOLOGY ADOPTION IN THE ARABIAN GULF COUNTRIES: THE CASE OF E-GOVERNMENT**

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### **ABSTRACT**

*In the last decade, a lot of countries started to adopt e-government to reduce costs, improve services, save time and increase effectiveness and efficiency, and improve trust between governments and citizens. Therefore, it is very important to put e-government adoption in all countries under the light spot. In this paper, we will discuss the advantages, challenges of e-government as an international approach with a focused view on the Arabian Gulf countries. We will investigate the advantages of implementing e-government systems throughout those countries. In addition, the understanding of these advantages can help decision-makers recognize the success and risk factors in e-government adoption. Furthermore, we will discuss the challenges facing the adoption of e-government in the Arabian Gulf countries. We will also highlight some important points that need to be taken into account in all phases of the engineering process of the e-government.*

### **KEYWORDS**

*E-government, GCC countries, Advantages, Challenges, E-government websites*

## **1. INTRODUCTION**

E-government is the digital interaction between governments, from one side, and citizens, businesses, employees, and other governments from the other side. Just like other parts of the world, the Arabian Gulf countries, or the so called Gulf Cooperation Council (GCC) countries which are: United Arab Emirates, Kingdom of Saudi Arabia, Kuwait, Kingdom of Bahrain, Sultanate of Oman, and Qatar are also interested in technology transformation by adopting e-government strategies.

Some of the Arabian Gulf countries started since more than a decade to implement and build their own governments online. The current state of e-government approaches in the Arabian Gulf countries will be explored by navigating through different success and failure case studies to figure out strength and weakness points in order to invest them to come out with some guidelines for a successful e-government implementation strategy.

A lot of challenges and drawbacks face the adoption of e-government in the Arabian Gulf countries. Those challenges have to be taken into account in the process of implementing the e-government technology. This paper discusses some main challenges the adoption of e-government in the GCC countries. It also introduces some of the website design strategies that can be applied to come out with well-designed e-government websites in terms of online information, foreign language access, communication, services provided, and use of advertisements on e-government websites.

In this paper, we will discuss the advantages of e-government as an international approach with more details on the Arabian Gulf countries. We will investigate the advantages of implementing e-government systems throughout those countries. In addition, the understanding of these advantages can help decision-makers recognize the success and risk factors in e-government adoption. Furthermore, some recommendations and best practices on how to build a well-structured e-government websites are introduced.

## **2. E-GOVERNMENT DEFINITION**

Based on [1], e-government enables the integration of Information and Communication Technology (IT) into the world of the public sector to deliver services and information easily to citizens and other parties online. The e-Government involves the interaction between citizens, businesses, governments and employees. The e-Government consists of the following types:

1. Government to Citizens (G2C): The relationship between the government and citizens allows the citizens to access government services easily and quickly [2].
2. Government to Business (G2B): This allows the interactions between governments and businesses which will simplify processes and reduce costs [3].
3. Government to Government (G2G): refers to the relationship between governmental organizations, as for example national, regional and local governmental organizations, or with other foreign government organizations [2]. Online communication and cooperation allows government agencies and departments to share databases, resources, skills and capabilities, enhancing the efficiency and affectivity of processes [4].
4. Government to Employees (G2E): Government to Employees is the interaction between government and its employees. Employees can access specific information, can explore get training and e-learning offers, and other tools that may assist them in accomplishing their jobs [2] [5].

The e-government as all technologies has advantages and disadvantages. The next section will explore some advantages and challenges of e-government implementation in the world and more specifically, in the Arabian Gulf Countries.

### **3. ADVANTAGES AND CHALLENGES**

#### **Advantages**

Benefits gained by use and application of e-government in developing countries are the same as those in developed countries and more specifically in the GCC countries. Those advantages can be summarized as follows:

**Cost Reduction and Efficiency:** Cost of services and activities will certainly be reduced and be more efficient when using online interaction between different e-government parties.

**Improved Quality of Service:** The traditional way for service delivery varies from filling paper application forms, and visiting different governmental offices in different places or cities. This results in high costs and citizen and business dissatisfaction. This can be overcome by implementing an e-government approach which will reduce cost and accelerate services and transactions accomplishment. For example, In the Kingdom of Saudi Arabia a lot of governmental applications is done only in Riyadh (The capital of Saudi Arabia), and the citizens or the residents have to travel there and spend a lot of time waiting for their turn in order to complete a simple transaction.

**Improve the Quality of Decision Making:** The existence of online medium of interaction between citizens, employees, businesses and governments such as forums, discussion rooms will build trust between different parties in government and improving the relationships between the government and its citizens. The authors in [6], argues that strengthening relationship between government and citizens could improve the quality of services by allowing government to tap wider sources of information, perspectives and solutions to meet the challenges of policy making under conditions of increased complexity.

#### **Challenges**

The adoption of e-Government implies the existence of a wide variety of challenges to its implementation and management. In this section, we briefly introduce some main challenges of implementing e-governments. The Challenges of implementing e-governments can be summarized as follows:

**Infrastructure:** when building the e-government, the infrastructure should take into account different technological advances and connection medium, like mobile phones access method. Furthermore, the e-government infrastructure needs to be designed to serve special sectors of the society such as handicapped or blind citizens. According to [4], the higher the level of human development, the more likely citizens will be inclined to accept and use e-Government services.

**Policy issues:** The availability of laws and regulations that control the the relationship between different e-government parties is essential. Therefore, some countries started early in putting such laws and others like some GCC countries issued such laws in the past 6 years. For example, The Electronic Transactions Law of the Sultanate of Oman has been issued by sultan Qaboos Royal Decree in 2008 [7].

**Human development continuous learning:** the availability of trained and skilled employees who can handle e-government transaction and control their flow is very essential. Therefore, the governments should make a wide range of training programs and strategies to overcome this problem. Furthermore, the governments should also adopt continuous learning strategies to keep the employees updated of the recent technological tools and advancements related to their jobs.

**Change management:** according to [4], "*Employee resistance to change is still the biggest resistant factor to successful change. Employees fear changes in general and ICT applications in particular as they believe that ICT would replace them and so cause job losses*". This can be overcome by encouraging employees and convincing them that this transformation will not affect them negatively but also they will get benefit from it by learning new technologies and reduce their efforts and time spent to finish particular transactions.

**Strategy:** The governments must have a precise strategies to overcome the disadvantages resulted from the change to e-government. This can be done through doing different studies and research related to different fields of e-government adoption including cost, infrastructure, training, etc.

**Cultural differences:** if the cultural heterogeneity found within borders, gender, age, profession, education, ethnicity, religion and social class, are not considered in the design of e- government services, their adoption will be limited to certain groups in society and thus will slow and confuse e-government adoption and functionality. These issues are consistent with works in [8], [9] and [10], who found that e-government, should respect and consider various cultural differences within society. Those factors should be taken in the implementation of the e- government project and are supportive of any activity from any country. Therefore, The GCC people, living with large numbers of foreigners, are more prepared to interact with others and are more open to other societies and cultures than people in many other Arab nations. But in the sametime cultural and language diversity as for example United Arab Emirates should be considered in the implementation process.

**Ease of use:** The work in [11] studied the ease of use of e-government services on a group of people, based on participants' ability to use the Internet. The findings suggest that the greater one's Internet experience, the easier it would be to learn and use e-government services.

**E-Bureaucracy:** The fear of e-government bureaucracy by forcing the user to follow unnecessary and complicated procedures when completing government transactions.

#### 4. THE STATE OF E-GOVERNMENT IN THE GCC

The Gulf Cooperation Council (GCC) is made up of six countries, namely Saudi Arabia, the United Arab Emirates, Oman, Kuwait, Bahrain, and Qatar. In the UN report February, 2012 the rank of some GCC countries has increased significantly for example, as shown in table 1, basedon the United Nations E-Government Survey which was released in February 2012. The UAE has leaped to rank 7 on "online service index"; up from rank 99 in the 2010 version of the biennial report. This giant progress was reflected in the overall rank of the UAE in the e-Government development index. The UAE has advanced from rank 49 in 2010 to rank 28 in 2012 [12].

Table1.UN ranking of GCC countries e-governments

Country	E-Government 2012	Rank 2012	Rank 2010	Rank Change	
United Arab Emirates	0.7344	28	49	+21	↑
Bahrain	0.6946	36	13	-23	↓
Saudi Arabia	0.6658	41	58	+17	↑
Qatar	0.6405	48	62	+14	↑
Oman	0.5944	64	82	+18	↑
Kuwait	0.5960	63	50	-13	↓

In the following subsections we will go with more details through the experience of e-government within the GCC countries:

##### Bahrain

The Kingdom of Bahrain followed in the development of its strategy for government E-2016 methodology consists of 6 main stages. The strategy has been confirmed to include all dimensions and factors related to the E-government development program through the application of an integrated framework. That set ambitious goals and design to form e-government target and operational business model to implement major projects and determine the required funding and possibilities. The study took into account the status of e-government, experiences of other e-governments and best practices in other [13]. It also took into account the latest study of global reports on e-governments such as the 2012 United Nations E-Government report in which Bahrain was ranked 36 with a dramatic decrease of 23 points in comparison to 2010 report.

#### **Kuwait**

The Kuwait government made a lot of success in e-government through different projects and activities [6][15]. From 2010 to 2012, the rank of Kuwait decreased 13 points less. This means that Kuwait need to reconsider an review their e-government strategies and services.

#### **Oman**

The Sultanate of Oman is currently implementing a holistic approach to the *e-Oman* (strategy), which consists of e-government, e-commerce, e-learning and other e-services. The taskforce wants to "... *remove the stupid rules and regulations and put the whole process on the Internet.*" [17]. Addressing the issue of *cyber illiteracy* and *digital divide*, Oman has initiated numerous programs on computer and Internet literacy, especially for the Omani women, hoping to at least partially bridge the gap. The 2012 UN report shows the positive increase in the ranking of Omani e-government as shown in table 1.

#### **Qatar**

Qatar has launched a lot of efforts to transform to e-government [16]. The first step was a service to renew of the residents permits that was later expanded to other services for residents and citizens like passport renewal. This expansion strategy kept getting wider and wider with the time

progress to include all government services. This can be notices through the rank positiveincrease of 14 points in 2012 in comparison to 2010 as shown in table 1.

#### **Saudi Arabia**

"YESSER" is the Saudi Arabia's e-government program. As the Saudi government realized the importance of e-government, they started to learn from the experiences of other countries projects[18]. As the Saudi government proceed to as World Trade Organization member, it has to fulfill certain conditions. One is the e-government matter. In the 2005 UN E-Government Readiness Report 2005, Saudi Arabia rank was 80. From that point Sadi Arabia started to enhance its services offered by different Saudi Ministries such as Hajj Ministry to facilitate the applications for both *Hajj* and *Omra* and worked hardly to get benefit from the technological innovations inthe last few of years. As a result, in the 2010 UN report Saudi Arabia was ranked 85, and then in 2012 its rank was raised to 41.

#### **United Arab Emirates**

The United Arab Emirates, especially the Emirate of Dubai, stand as the leader in e-government [19]. It provides a wide variety of online governmental services such as the services provided by Dubai police department including updated traffic reports and car profile [20]. It is clear that the UAE e-government initiative is one of the most citizen centric regional efforts serving as an example not only in the GCC countries but also all over the world. As mentioned before, the UAE has increased its rank in the UN 2012 report to 21 positive points. Over this short period, Emirates e-Government has succeeded in regaining the leading position of the UAE in the field of e-Readiness in the region and the world [12].

## **5. WEBSITE DESIGN STRATEGIES**

The authors in [22] showed that the government websites in two GCC countries (Saudi Arabia and Oman) still need considerable efforts to become accessible websites at all. Governments in GCC countries need to review their accessibility related policies to accelerate the transition to accessible e-Government websites. Also it should take into account that websites must serve all kinds of citizens, including disabled visitors to websites. Website development requires different IT expertise in terms of accessibility, usability, security, user interface design, etc. Therefore, the governments need to focus on the investment of such skills.

Government should either adapt the existing web accessibility guidelines or develop its own guidelines that are appropriate for their context. The authors in [22] argue that governments should set a policy for web accessibility together with an enforcement or encouragement procedure e.g. make the accessibility of government websites a compulsory requirement or give a reward for those who accommodate website accessibility may increase web accessibility. Furthermore, e-Government websites should be accessible and usable for disabled people as they are a non-neglected group in any country and they have the right in getting services and participate in decision making.

### **5.1 Recommendations for Online Service Website Designers**

Providing government services via the internet has become a worldwide practice and is routinely described as e-Government. There are many examples of poor websites and many problems have emerged for users of e-Government services. Understanding the drawbacks and disadvantages of such websites is the key point to build effective and successful e-government websites. The effective use of evaluative techniques can increase the efficiency of these sites and hence encourage people to use them. In addition, Web designers should also focus on website's content including information, graphics and its appearance, fonts, colors, number of graphics and links, use of audio and video files, and the structure of the home page [23][24]. This will lead to a comfortable navigation and will increase the user trust and satisfaction in the website which will consequently improve the positive interaction between the government and its employees [26]. For the case of the GCC countries, it is recommended that web designers develop online service websites in Arabic and English languages to insure that website is understandable for those who have difficulty of dealing with Arabic Language from visitors or residents.

## **6. CONCLUSION**

E-government can be a very useful tool in improving quality of services provided to citizens. It also facilitates interaction between different government agencies and different governments among countries. It has the advantage of reducing cost, time, efforts, bureaucracy, etc. In order for the e-governments to be successful, the governments need to learn from the experience of other similar countries and get benefit from their success and failure stories. Furthermore, a user-centered approach is recommended to be the core point during the process of e-government establishment. This can be accomplished by understanding the requirements and culture of people and taking them into account in the design process. The GCC countries are following the right path in the process of adopting and transformation to the e-government approach. Finally, e-government website design strategies and best practices need to be considered while designing the e-government website.

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