

# Challenges in Successful e-Government Development: A review on Sultanate of Oman

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**Abstract-** Every government is seeking to provide the best services to its country to achieve efficiency and accepted performance. This goal could be achieved by improving the service performance of the entire sectors in society. Billions of dollars was invested by governments in order to undertake their first step towards implementing the e-Government project and specially implementing the best methodology of all attached and correlated electronic-based services to it. Government of Sultanate of Oman has realized the importance of moving towards the information century. Therefore, e-Government initiatives were launched in Oman as a part of overall country information technology in 1998. It was first established under the name "Digital Oman" but many obstacles and challenges faced during this stage. The purpose of this research is to investigate and explore the factors that drive the e-Government implementation and adoption that would affect the e-Government performance and implementation. Thus, the study outcomes should be the guidance to conduct e-Government projects in Sultanate of Oman to reduce and eliminate as much as possible the failure possibilities. The study should also provide roadmaps and guidelines for future researchers and policy makers on the project in general and focused in citizen's determinants for e-Government services that would enhance the Citizen-government relationship.

**Index Terms-** G2C, GOE ICT, EGDI, GNI, ITA, TRA, UN, e-Government, Oman

## I. INTRODUCTION

In recent years, Internet and Information Technology growth has been the main driver and catalyst for demand of change in most of the business and service sectors in the world. There from, new technologies and concepts has changed government interaction with business, agencies, organizations and citizens (Lee, 2010; Rokhman, 2011) by establishing new service styles, such as: e-banking, e-commerce, e-voting ...etc. Digital government, electronic government or in short it is called e-Government are all names of government services provided to citizens through new IT technologies to make it faster and easier. It was first initiated in the end of 1990s and it is considered as additional innovation brought by technological progress from Information Technology growth

Every government is seeking to provide the best services to its country to achieve efficiency and accepted performance. This goal could be achieved by improving the service performance of the entire sectors in society. Billions of dollars was invested by

governments in order to undertake their first step towards implementing the e-Government project and specially implementing the best methodology of all attached and correlated electronic-based services to it like: e-payment, website, e-system, e-application...etc. Hence, they will permit new channels of interaction and communication between different government sectors and between government and business organizations. This interaction will lead to improvement in government performance and efficiency while interacting with the main and the most important category of this project which are customers. Specifically, customers in e-Government and government point of view are citizens. Moving towards e-Government would give many advantages to the country style of service along with budget usage and controlling. Indeed, it will give a great enhancement in the operation of the government in many aspects for the betterment of Government Operation Excellence (GOE).

G2C implementation challenges towards GOE will play a key role in terms of technology and behavioral intentions. This challenge will reflect and affect directly the GOE and especially the government-citizen relationship. In Oman, there are many technological aspects that affect G2C like internet coverage, internet quality, citizen's technology knowledge and technology availability. On the other hand, some behavioral aspects are also available like trust in government and trust in technology.

Government of Sultanate of Oman has realized the importance of moving towards the information century. Therefore, e-Government initiatives were launched in Oman as a part of overall country information technology in 1998 (Abdulmohsen, Al-Badi and Mayhew, 2005). It was first established under the name "Oman Digital" but each government sector is having its own website and its own services and e-services without any interconnection between them but still not all of the government sectors initiate electronic services or applications. The real situation in Sultanate of Oman is that some governments has its own website and only has the ability to download form and few of them has the ability of submit online request. However, the service integration and connection between different government agencies is not yet established. Although that this initiation was established long back but the same system is still valid till date which create a big question about the requirement of modification and improvement of such service.

His Majesty Al Sultan Qaboos Bin Said spoke about the importance of adopting and the usage of the new technology in the Omani daily life style on 11th Nov 2008 and he said,

*"Information technology and communications have now become the main elements that move forward the development process in this third millennium ... We call upon all government*

*institutions to speedily enhance their performance, and to facilitate their services, by applying digital technology in order to usher the Sultanate into the constantly evolving spheres for applying knowledge.” (ITA, 2010, p.5)*

As a response to His Majesty’s speech, Oman Government decided to boost up the process of initiating the e-Government. Therefore, framework to move towards using Information and Communication Technology (ICT) as a platform for delivering and offering services has established by Information Technology Authority (ITA) with the following desired outcomes:

- Faster and better government services for both businesses and citizens
- More Effective and efficient government
- Better optimization of investments and resource (ITA, 2010)

This paper would review the development methodologies used in e-Government construction in Sultanate of Oman which is showing tremendous developments in all sectors in e-Government. This review through the identification of the major issues and aspects in implementing e-Government initiatives in Oman. Moreover, some major challenges in such performance identified and related suggestions and recommendations which may for ICT realization.

## II. LITERATURE REVIEW

The impact on changing the style of business citizens and government interactions and communication is significant by introducing the ICT (Information Communication Technologies) and its effectiveness could be observed by the fast acceptance of related technologies like: internet, smart phones and taps. Even now, modern societies and digital economies consider ICT as the basic foundation (Castells, 2009; Varian et al., 2005). However, all the countries of the world depend of social environments and political factors readiness (Gauld & Goldfinch, 2006; Loader, 2009; OECD, 2009). Threatening the existing power settings and economic relationships is one of the exhibited possibilities of modern technologies (Beer, 2011; Nixon & Koutrakou, 2007) as well as the huge potential for transformation and its impact in business, citizens and government manners and their relations (Ibrahim, Yazici, Mishra and Arifoglu 2005) like forming an essential tool for politics dissent organization around the world (Hirschfeld, 2012; Reddick, 2010; Serageldin, 2011).

From government point of view, e-Government is becoming a unanimous task which should be taken in consideration because it distribute government information and services in parallel with facilitating its operations. Generally, e-Government aims to offer and provide a variety of services which concerns citizens in the city or country in efficient, accountable, transparent, accessible, fast, cost effective and improved services way which are counted as the expected e-Government advantages (Atkinson & Castro, 2008).

In e-Government there are primarily three main perspectives including citizens, businesses and government that is required to be considered while developing successful e-Government (Reynolds and Regio, 2001; Mohammed & Sriram, 2014). Al-

Azri et al (2010) argued that the successful e-Government projects implementation are concluded in organizational paradigm, technology paradigm and end – user paradigm. Al-Rahbi (2012) studied some effective technical factors in the successful e-Government implementation in Oman and concluded that the major factors are: ICT Infrastructure, IT Standards, IT Security and Technical Expertise.

Although many different studies were conducted by different scholars in e-Government development and implementation (Ashrafi and Murtaza, 2008; Valentina and Ndou, 2004; Sonntag et al., 2002), still some developing countries could not achieve the desired goal. Since, a vital role of this implementation is played by technological development and people acceptance. This paper would identify the major flaws in e-Government development and implementation in the Sultanate of Oman.

### 2.1. Oman e-Government strategy

E-Government in Sultanate of Oman is part of the 2020 economic vision that was initiated and presented in 1995. E-Government or as known locally Oman Digital or e-Oman was approved on November 2002 and it is the main foundation plan. Thus, it improves that backbone of the knowledge spreading by the e-Government. The first marketing strategy initiated for e-Government in the Sultanate of Oman called “Towards Digital Oman” was in 2003. The Sultanate of Oman is considered and identified as a developing country which is located on the south east of the Arabian Peninsula (Ministry of Information – Oman, 2008b).

Many forms related to e-services are provided for citizens for downloading and utilization. Such as: school results, some college admissions, healthcare, training, employment, Omani culture, housing regulations... etc. (Oman official website).

## III. RESEARCH METHODOLOGY

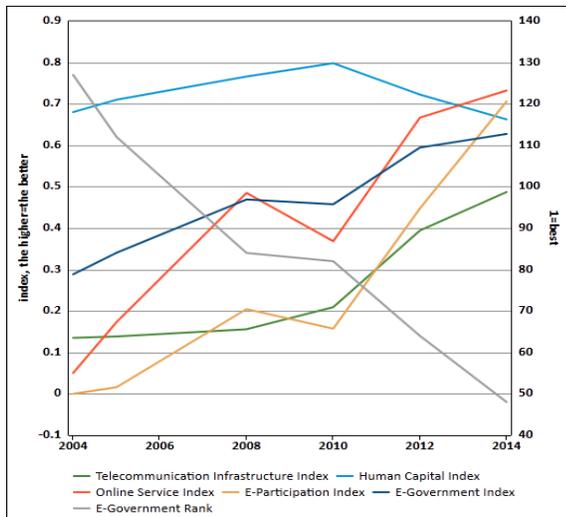
In order to identify and evaluate the e-Government sustainable development in the Oman, secondary data were obtained through various sources like the United Nations statistical data on e-Government implementation sustainable development and readiness. This data were analyzed and evaluated from different perspectives of e-Government.

### 3.1. UN survey analysis

Various studies and analyses conducted by United Nations regarding worldwide e-Government readiness and development. Table 1 shows various readiness indices of Oman during 2010 to 2014 according to UN Survey Results.in the table it is noticed that e-Government ranking of Oman raised dramatically throughout this studied period. Oman’s ranking raised 24 ranks in only 4 years, 18 ranks from 2010 to 2012 and 16 ranks from 2012 till 2014 with scoring HIGH EGDI index throughout the period (0.5-0.75). Moreover, GNI score was high and reached 25250 with high level of income among citizens. However, Human capital faced a slight decrease from 2012 to 2014 but it didn’t affect the dramatic enhancement in e-Government progress in the country.

No	Factor	2010	2012	2014
1	Total No. of Countries analyzed	192	192	192
2	Oman Position	82	64	48
3	Oman EGDI	0.458	0.594	0.627
4	Online index	0.368	0.667	0.732
5	Telecomm index	0.213	0.391	0.487
6	Human Cap index	0.80	0.722	0.662
7	E-Participation index	0.157	0.447	0.706

**Table 1: UN factor analysis 2010, 2012 and 2014**



**Figure 1: UN Factor Analysis 2010, 2012 and 2014**

#### IV. FINDINGS

Based on the above analyses and table, it is evident that the Sultanate of Oman is showing a remarkable improvement and development in the e-Government implementation. Various studies show that the Sultanate of Oman has developed international benchmarked strategies in order to develop and implement e-Government initiatives to enhance its relation with citizens which is called government-citizens relationship. Osman (2010) conducted an empirical study in Sultanate of Oman about portals in Oman and the following points were observed and concluded:

- technical support issues in the portals are less frequently used
- important features that should be utilized by citizens are underutilized

Therefore, it is essential to assess the current situation with the associated investment with the available options of corrections. These corrections should be connected and observed from citizens to make the system more of citizens-centricity. Although e-Government having achieved currently a successful e-Government implementation level but it faced many different challenges and it needs to put more effort in order to achieve the desired goal (Al-Busaidy and El-Haddadeh, 2011). Al Musawi

(2012) illustrated that e-Oman comprises to have and obtain a wide range of different initiatives and services that are designed and created specifically for the following:

- improving the government services efficiency
- enhance businesses activities
- empower citizens and employees with skills and knowledge
- meet society’s different needs, requirements and expectations
- Direct Oman as a country towards becoming a Knowledge-based Economy.

Whereas, Al-Gharbi and Al-Kindi (2010) stated that the e-Government purpose in Sultanate of Oman is to:

- Improve the government-citizens relationship
- Provide continuous services round the clock
- Cut current available departmental hierarchies
- Reduce queuing in many agencies ministries’ offices
- Speed up services by providing a single point contact location

The Omani government has developed clear mission and vision for the e-Oman achievement; the key e-Oman mission statements is begin with streamlining the government services to achieve Oman 2020 as a cycle (AlRahbi, 2011). Whereas, the strategic visions are also set from developing society for increasing and promoting awareness among local public citizens.

Information Technology Authority (ITA) is the main responsible of the e-Government project in the Sultanate of Oman since it provides efficient services, integrates processes and enhance service efficiency. Additionally it is responsible to implement, supervise and maintain Digital Oman Strategy (Information and Communication Technology Surveys Results, 2012).

E-Government and Information sector in the Telecommunications Regulatory Authority (TRA) is responsible for overseeing the process of e-transformation, follow up the e-Government implementation plan, ensure the promotion possibilities common infrastructure for government and raise readiness transformation of e-services provided by the government for clients. In the recent years, Omani government has scored a remarkable progress in the area of e-Government transformation due to the effort targeted in developing ITA. ITA is an autonomous body seeking and taking care of the successful implementation improvising of Oman’s e-Government. It emphasizes upon the e-Government played role in the process of sustainable development.

#### V. CHALLENGES AND OBSTACLES IN IMPLEMENTATION

The key parts of strategic management in terms of monitoring e-Government initiatives and progress is by identifying and understanding gaps between current and future states. The current realities and reform initiatives gap in the public sector is vital in measuring and determining successfulness of reform initiatives. In addition, progress mapping from “the way things are now” to “the way things ought to be” allows decision makers to investigate and monitor

potential progress in each area and benchmark it with the requirement for future development by e-Government. This could assist administration and strategy makers in analyzing impact of resource commitment, potential advantages and implementation effort. Since, all of these levels and areas are engaged in the planning method (Chadwick and May 2003).

Furthermore, energy and power to change is a transformational method requirement and it is mainly generated and driven by the mapping and differentiating between current reality and mission statement. Precisely, transformation method requires two main items to keep it improving which are ideas of required improvement and a solid picture of current situation. Therefore, the creation of new representation of e-Government should implementers and planners to map and measure current implementation stage versus the required and intended result (Chadwick and May 2003).

Chadwick and May (2003) describes the e-Government effort as the reform effort which aims to break new platform in many areas. For example, e-Government provides the ability to perform basic e-transactions and information access but still some citizens requires and demand more sophisticated and customized type of goods or services. Thus "one size fits all" approach is not always the right approach to follow. The focus now in the delivery of technology-enabled services tend to be shifted to provide services upon to the user's needs and demands rather than targeting general operation efficiency. This keep trends in increasing manner in terms of specialization, integration and functionality. A further arrangement finding in the implementation is the horizontal and vertical integration which lead to no pre-created roadmaps and no international standard for it agreed worldwide. Hence, strategic and operation domains requires more balance especially in citizen-concentrated initiatives (Chadwick and May, 2003).

Heeks (1999) stated that the development in technology field could either limit or enhance applications choices or functionality which should keep planners and decision makers fully aware of required technologies and applications change without forget to explore the updates and rooms of improvements. Since strategic foresight coupled together with technology and application change understanding is essential to maintain strategic constrains and to manage internal and external operations. Consequently, e-Government framework acts as a diagnostic tool that helps to predict the future trend impact and requirements. Therefore, this potential effect should be considered and taken into account throughout the entire development life cycle (Heeks, 1999).

Functions, social and managerial purposes differ from nation to other in strategic priorities which add different unique flavor and direction by decision and strategy makers to each e-Government endeavor. Thus, viewing and assessing e-Government plans is essential in all areas like context and application. Therefore, all countries could be considered in the early stages of development (Heeks, 1999). However, this variety and different approaches from countries could be utilized to take lessons and selectively identify the application parts with the best combination that suit the specific nation to create synergistic learning and network of knowledge. Indeed, this will reduce and optimize the time and cost required for planning and strategizing efforts (Heeks, 1999).

Unger & Dougherty (2013) argued that e-Government is considered and counted as an important government's improvement strategy as one of the most governmental reform leading aspects. However, there is delay in the improvement rate that is especially in developing countries. This delay is due to many aspects like corruption, weak financial planning, lack of good governance, technology shortage in knowledge and availability, investments weakness and the main aspects is the lack in government trust as a lack in government-citizen relationship (Cable, 2013; Hassan and Fatimah, 2014).

An essential condition that would affect the e-Government success in Oman is the existence of a small leaders group equipped with solid and specific vision and strategic thinking on how to promote e-Government and how to reach their final destination goal. Indeed, all operational preparations are limited if there is no clear vision and no leadership ability to provide guidance for the e-Government establishment. In fact, the uncertainty about the e-Government effectiveness is one of the largest adoption barriers to overcome. Leaders monitor the development and make decisions to move forward to promote e-Government in the public sector and they participate actively in specific e-Government processes projects and strategic importance and monitor the implementation while starting new initiatives to coordinate them in institutions across all government levels.

Measuring the potency and e-Government utility is a big challenge for the Omani government to overcome. Since, it is not really proficient as far as the e-Government services provision is concerned. The biggest challenge that is confronted is that there is lack of consensus and clarity in defining the e-Government domain and these lacks in marketing the services or there is even no market value for some services. Therefore, determining the e-Government value and the utility is one of the major challenges that are being faced generally by the Middle Eastern countries and particularly Omani Governments. Hassan and Fatimah (2014) in the absence of good government-citizens relationship and specifically citizens' trust, citizens may become more suspicious about their service system presented by the government. On the other hand, there are many services falls under the e-Government domain but when there are some restrictions and curbs in the information technology industry there will be a fair chance that it will not really auger well in the process of the implementation. Thus, developing the indicators and ensure that they describe the e-Government performance can play as a major barrier and challenge for the authorities to be done and achieved. Existing research on e-Government services citizen-centric delivery especially in developing countries is still facing lack in explanatory power for some reasons like understanding the relationship between the ICT implementation and social structures. Having citizen-centricity e-Government approach would reduce the huge gap between applied strategies and government policies from one side and citizen's perceptions on the other hand. Thus, the citizen-centric delivery e-Government services determinants in developing countries would allow better understanding of citizens' needs, desires, requirements and priorities that must be taken into consideration by governments for ensuring the success of services (Elsheikh and Azzeh 2014). Up till now, measuring e-Government's e-benefits in general and ensure the availability of strong linkage

between e-Government services provision and the economic prosperity is not done yet. Moreover, empirical data on the subject is neither really clear nor available and thus it presents a highly difficult situation and status for some of the governments in general and for Omani government in particular.

## VI. SULTANATE OF OMAN INITIATIONS

Currently, citizens can find more services and facilities and necessary information through official e-Government websites and portals. Information Technology Authority (ITA), developed portals and websites to have wide range of information and facilitations that assist and help public to gain their desired service. For assisting citizens in using these developed portals and websites, double languages are available in them Arabic and English versions to reach all the citizens in the country. Mohammed and Sriram (2014) discussed that this is a very good strategy for reaching, educating and training public people to optimally utilize e-Government technology. On the other hand, Omani government through ITA initiations established and developed various policies and strategies for the successful e-Government development and implementation (Mohammed and Sriram, 2014).

## VII. RECOMMENDATIONS AND CONCLUSIONS

Omani government needs to consider different basic factors illustrated and defined by United Nations and other benchmarking agencies. "The most important issue in implementing successful e-Government is the citizens' acceptance and usage. The citizens need to be trained and educated to use the e-portal services available in the corresponding structure." (Mohammed and Sriram, 2014).

Gilmore and D'Souza (2006) illustrated that it is an essential aspect to focus in citizen in governments prospective and customer in companies prospective as the main factor while presenting a service style or changing the service approach. Hence, e-Government should be presented as citizen-centricity where it basically represent the difference between the delivered services against the desired one. Moreover, it would evaluate the current service delivery in terms of meeting citizen's expectation and needs by the following attributes:

- Service design coverage against user requirements
- User interfaces languages of use against available most common local used languages
- New services style and approach against conventional services offered earlier
- The reduction of citizens visits to higher level offices for completing desired services
- Governmental employees knowledge and familiarity with the services packaged and delivery for different user groups or individuals

Therefore, Chan et al. (2010), Vencatachellum & Pudaruth (2010), Abdulwahab & Dahalin (2011), Keramati & Chelbi (2011), Lessa et al. (2011), Alzahrani & Goodwin (2012) adopted different empirical study in order to have a system facilitating e-Government as more of citizen-centricity and to influence citizens and their intentions to use as the main goal. As

per these recent empirical studies, it was shown that the facilitating conditions along with effort expectancy and performance expectancy has a significant impact as control factors that influences directly citizens' intention to use and it will keep e-Government upon to citizens' desire and requirements. Citizens engagement is illustrated as a way of improving citizens' trust in governments and from it the government-citizens relationship to be more citizen-centricity system (Bonsón et.al, 2012).

## VIII. LIMITATIONS AND FUTURE SCOPE

The main limitation of this study is that the collected data is from the internet resources and suggestions are based on the available literature. Therefore, the study shall be further enhanced and developed by conducting a quantitative survey with various stakeholders and users of e-Government portals. Hence, findings and suggestions may differ if primary data analyzed.

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