

# Evaluation of Saudi E-Government Portal (SAUDI)

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**ABSTRACT:** *This paper discusses the implications of an ideal E-Governance. Besides the work evolves a methodology for evaluating the E-Governance using three stage analysis which consists of Visibility Analysis, Alexa analysis and Usability and heuristic evaluation. The stages outlined are applied for evaluating the E -Governance in Saudi Arabia and the empirical results are discussed. The evaluation has good implications for future E Governance system in various countries.*

**Keywords:** E-Governance, Government Portal, Evaluation of E-Government

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## 1. Introduction

There are many definitions of e-government. Some of the definitions emphasize in the use of Information Technology & Communication (ICT) in government business [1, 2]. From this definition's perspective, the purpose is to enhance the internal process of government agencies which implies that it will be finally reflected on the users of e-government. [4] defined the aim of e-government as a means of government reform and enhancing public services. A broad definition by [11] ) defines e-government as using the ICT to provide government services to the public, engage citizens and to support government operations. He identified four dimensions of e-government: e-services, e-management, e-commerce, e-democracy.

In fact, there is no one definition that is widely adopted as there are different perspectives on e-government. However, we can say that e-government should not be perceived as just a transformation of paper-based government activity to ICT; it aims towards the use of technology to provide better management of the country reflected in better quality of services provided to the public and better contribution to the economy.

## 2. Literature Review

Although there are growing efforts to fill in the gap of the e-government development and evaluation in the Arab world, there is still a need for more investigation of this area, particularly in Saudi Arabia. Most of the resources I was able to identify in the area of e-government evaluation, are giving a special focus to a particular aspect of e-government. For example, some of the studies are focusing on accessibility issues; others are focusing on security of transaction. Although some of the papers have given a quick account of the state of e-government in Gulf countries, none of the resources identified have conducted a comprehensive evaluation of the e-government portal in Saudi Arabia of evaluation. This paper is trying to achieve such an objective, to some extent, within the limitation of time and budget to a varying degree.

Some of the studies have explored the motivations and objectives of e-government; others investigated the framework followed to establish e-government.

These publications also have followed different patterns of investigating the subject, some of the researches are investigating e-government in Saudi Arabia particularly, and others are investigating the Saudi Arabia initiative in the context of a group of Arab and Gulf countries using a comparative analysis.

### **3. Methodology**

The aim of this research is to evaluate the e-government services provided through the Saudi Portal ([www.saudi.gov.sa](http://www.saudi.gov.sa)). As the e-government field is relatively new, there is no specific methodology or measurements agreed as instruments to evaluate e-government, although there is a growing effort to contribute to this field and produce a methodology or framework specifically for e-government evaluation [10, 7]. In fact, there are many approaches commonly used to evaluate the e-government. However, the internet is mostly used to gather data used in this evaluation [10]. This is ascribed to the fact that the internet is the main channel to deliver the e-government services. This is apparently true, as most of the service of e-governments is provided through government's portals and websites. Even though there are other channels to provide e-services such as mail, telephone and e-mail, the portal is the most dominant channel. The focus of this research is to evaluate the e-government portal of Saudi Arabia (Saudi: [www.saudi.gov.sa](http://www.saudi.gov.sa)) hence the instruments used for evaluation and data gathering will be internet based.

This research has adopted four methods of evaluation that is found to be efficient and capable of providing comprehensive account for the website and portals being evaluated[10]. These methods are:

- I. Evaluation of e-government stages (stage analysis)
- II. Visibility Analysis
- III. Alexa analysis
- IV. Usability and heuristic evaluation

#### **3.1 Evaluation of e-government stages**

The first of these methods is to evaluate the levels or stages of e-government service achieved through the e-government portal. There have been many categorizations of e-government stages in the literature of e-government which differ in the number of levels and the types of services in every category. The higher the level of services achieved, the more advanced and mature the e-government services provided.

In this research I am going to adopt the following stages of online services which I found more precise and comprehensive:

- Web Presence: websites contain information about the government services that need to be applied for in person.
- One-way channel: downloading some sort of electronic applications and forms that need to be filled in and applied for in person.
- Two way channels: communication with visitors via e-mail / mobile phone (contact us). Also evaluating visitors' satisfaction and feedback about different services provided without any transaction.
- Online Transaction: the possibility to perform online transactions such as driving license renewal, payment of services and utilities like water, electricity etc.
- Integration (single sign on): user will login in once and will be able to get all the services. The Data shared between different government's websites

The service listed under the following categories will be checked in the websites offering them and evaluated against the stages suggested above

- Personal Documents
- Labor and Employment

- Traffic and Safety
- Utilities

### 3.2 Visibility Analysis

This simple and easy to use approach can give reliable insight regarding the frequent use of a certain website. It uses the traffic generated by visitors of a websites to rank them when searched by a certain query [10]. The visibility of the site is the ranking of website within the result listed by search engine. The ranking is decided among a specific number of listed results. Usually it is decided according to the top ten or twenty. If the site is listed first among the top ten, then its visibility is 100%. If second is 90%. If third then 80% and so on [10]. A reliable result can be found by calculating the average of visibility using more than one search engine. The average will then be calculated by dividing the total over the number of search engines used. The search engines that will be used in this analysis are three of the most popular search engines in the globe. I avoided using Arabic search engines as they are very rarely used. The selected search engines are as follows: Google, Bing, and Yahoo.

### 3.3 Alexa Analysis

Alexa is a web information company which provides statistical analysis regarding website traffic. It ranks websites according to traffic globally and locally within the country the site belongs to. **This ranking is calculated according to the average of the number of visitors on a daily basis as well as page browsing of the website one month past.** The site ranked #1 is with the highest combination of visitors and page browsing in that country. It also provides other information such as the overall time visitors spend on the site and time taken to browse one page. [3]. The statistics Alexa providing can be taken as evidence of the popularity of a website. If this applied to the context of e-government, this can give indication of the level of usage of services and adoption of e-government services.

### 3.4 Usability analysis

Usability analysis is one of the popular methods of evaluating governmental websites [10]. Usability in an e-government context can be defined as the ease of which a normal user can perform certain tasks related to services provided in the e-government website. In fact, usability is becoming a very important concept in determining successful e-government websites. According to Baker, among the 73% of American adults who have accessed the internet and needed government contact, only 29% of them did so through e-government, many users avoid using e-government websites because of the difficulty of finding information [5].

Usability can be conducted in many different ways. One of these is to use specific tools to conduct the usability evaluation. This is also used to measure the accessibility of a website and validate html coding. Another approach is usability testing where a representative participants to conduct a task-based scenario. The third of these is usability evaluation using heuristic guidelines and standards which is the approach adopted in this research. Although using usability tools can be an effective way to evaluate e-government websites, but due to the limited budget of this research and the expertise required to use these tools, I have eliminated using usability tools to conduct the evaluation. Also due to the difficulty of finding representative users to participate in person to the usability test and because of the time it requires, the usability testing has also been eliminated.

Therefore, this paper has adopted the usability evaluation as an instrument to assess the usability of the Saudi government's portal. The reason for this is that it doesn't cost or require a lot of resources; it can be conducted with a small number of evaluators - one to three (U.S. Department of Health & Human Services (usability.gov), Undated) which is most applicable to this research. One of the advantages of using this method is that it gives a quick feedback about the website being tested.

Below is a list of categories of services which will be evaluated:

- Personal Documents
- Labor and Employment
- Traffic and Safety
- Utilities

The following aspects of the e-government websites have been evaluated:

- Navigation
- Content
- Design:
- Help and documentation

#### 4. Evaluation Result

##### 4.1 e-government stages

	Web Presence	One-way channel	Two way channel	Online Transaction	Integration
Saudi Portal (Saudi )	√	√	√	Partially Achieved	Not Achieved

Table 1. Stage Analysis

After checking the websites offering these services, we can say that the first four stages of online services are available throughout the portal. However, the online transaction stage is not fully achieved as the portal or any of the connected websites don't offer any online payment services. In fact the way the online payment services are facilitated in this Saudi is portal is throughout a payment channel SADAD (Figure 3). SADAD works as an intermediate payment network that connects banks internet channels of the banks with the monetary agency in Saudi Arabia (SAMA) (Saudi, 2010). Users have to use bank internet services to pay for the services.

The way the Saudi portal organized doesn't actually conform to fully integrated portal. The portal is just listing services that is linked to other government ministries and agencies websites. Because of this, users of the portal have to register and acquire a new user for every different website connected to the portal and hence provide the same information in order to be able to use the services provided. Every linked website is designed and therefore functioning independently from the other websites. This makes it more like a gateway or directory rather than a portal. (figure 1 & figure 6)

##### 4.2 Visibility Analysis

To conduct the visibility analysis, the following search engines were used to measure the visibility of the Saudi e-government portal: Google, Bing and Yahoo The average then will be calculated. The key word "*Saudi Government*" used to search the visibility in Both English and Arabic languages. The score will be awarded according to ranking of search result for the first ten. The result found is as follows:

Language	Google	Bing	Yahoo	Average
Arabic	100%	100%	100%	100%
English	100%	100%	100%	100%

Table 2. Visibility Analysis

The average of the visibility analysis was 100% visibility, which means high visibility among Saudi citizen which can be interpreted that the Saudi portal is widely searched among Saudi citizen.

##### 4.3 Alexa Analysis

At the time of evaluation, the statistics of Alexa showing that the Saudi portal was ranked by Alexa 616. This figure **based on the rank of traffic generated by the users visiting the website**. The same analysis was conducted on 2010 as part of master degree

dissertation and the Saudi portal ranking was 1,402. This is showing a great improvement on the usage of this portal by users.

#### 4.4 Usability Analysis

The service categories that will be evaluated are the following:

- Personal Documents
- Labor and Employment
- Traffic and Safety
- Utilities

Due to the fact that the Saudi portal is currently working as directory or gateway that lead to many independent websites, I found that to evaluate the above services, I am actually evaluating many different websites linked together. Therefore there are a great deal of inconsistency. This includes layout design, contents organization, navigation and many other differences. The user of these services has to spend considerable amount of time in first use to find his way inside these websites. The usability analysis has shown that there are many areas of weakness exist that need to be improved.

- The categorization of services listed in the portal doesn't help user to easily find a needed service. The user has to navigate many pages down in order to reach certain services.( Figure 1)
- No online payment provided by the portal. The user has to leave the portal and use his own bank account in order to use internet online banking to pay for the government bills and services.
- The lists of requirements for some services are very lengthy. (Figure 4)
- The use of ambiguous terms to name the Listed service. For example the use of the word model instead of form. (Figure 5)

#### 5. Discussion & Analysis

The analysis of the usability issues mentioned above can give us an insight about the factors contributed to this situation. The main factor is that these websites have been developed independently to satisfy individual needs for every ministry and government agency. The concept of services integration wasn't in consideration when these websites were developed as the e-government concept was relatively new and because of this, no common rules and standards have been followed during the development of governments' websites.

From 2010, which is the time when I conducted the first evaluation, the Saudi portal, until 2012, it has shown a great deal of improvement in the ranking, visibility and popularity among Saudi citizen. Table 3 below shows the details.

		2010	2012
Visibility	Arabic	66%	100
	English	23%	100
UN E-government development index		58	41
Alexa Analysis		1024	616

Table 3. comparison of Visibility, E-government development index and Alexa Analysis

Although the values of the parameters used in above table are showing sort of progress, the latest Alexa analysis is ranking the Saudi portal as 616, which reveals a low usage of the portal and popularity among the Saudi citizen. This seems to be contradicting with the visibility test, but this can be explained by taking into consideration that Alexa is also using the time spent by the user to view every page to calculate this figure. Combining this analysis with issues found in the usability evaluation, we can expect that users are having difficulty using the services offered by the portal.

## 6. Conclusion

The above evaluation has tried to draw a picture of e-government services provided through the Saudi e-government portal “Saudi ”. It has inspected the level of maturity of the Saudi portal using some easy to use analysis tools that help to identify some of the issue that may reduce the level of usage and adoption by the users of the portal. There is a clear indication that a great deal of technology and efforts have been employed in the services provided. However, there is a need to focus on the integration of the service offered and to re-design them taking the users as a central point of the process.

## 7. Recommendation

- Integration of the different government websites under one portal and sharing the data between them will help to provide better services through the portal. There is a need to unify the design of these websites.
- Listed service need to be categorized into subcategories according to certain criteria in order to help user to easily find the services.
- A regular update of the services is required at certain interval of time according the volume of change of services.
- To provide online payment in the portal in order to attract user of the services.
- The word and terms used to name the services need to be consistent and clear enough for users to understand.
- Multilingualism content needed to be provided whenever the expected audience is not speaking Arabic language.

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