

E-GOVERNMENT IN SAUDI ARABIA: CAN IT OVERCOME ITS CHALLENGES?

Sofiane Sahraoui, School of Business Management, American University of Sharjah, UAE

ssahraoui@aus.edu

Ghandi Gharaibeh, School of Business Management, American University of Sharjah, UAE

b00018980@aus.edu

Ahmed Al-Jboori, School of Business Management, American University of Sharjah, UAE

b00004999@aus.edu

Abstract

Saudi Arabia has been rising through the ranks of the UN readiness report standing at 80th in the 2005 rankings. While this is still modest in comparison to more advanced countries, there are clear signs that the country is striving to build a state of the art e-government infrastructure that will gradually move it into the information society. Through a thorough review of Saudi e-government, this paper attempts to reach an objective evaluation of current achievements and state of affairs. Saudi e-government is currently focused on building the first phase of the national e-government portal which will be mainly informational at this stage, will contain information about G2B and G2C services, and will be usable via different content delivery options. The various government ministries provide online services, although invariably the content and depth of their pseudo-portals are poor. They are mostly situated between stage II and III of the e-government stage model, hence not yet fully transactional.

Yet a more serious issue has to do with the development of an integrated e-government culminating in a full functioning portal. Indeed Saudi e-government is being primarily developed on a decentralized basis with no clear path for integration. An examination of the challenges facing Saudi e-government shows that a deeply entrenched bureaucratic culture, the absence of traditions for citizen participation, the lack of an objective evaluation framework, and foremost the absence of a clear management framework with ensuing accountability stand in the way of a credible e-government program that would have the potential of transforming Saudi government towards better governance. Though this study cannot be conclusive, Saudi e-government is rather far from world standards.

Keywords: Saudi Arabia, Middle East, e-government, e-readiness, ICT

1. INTRODUCTION

“The Saudi Arabian e-government is striding ahead of its European counterparts.” Such is the conclusion of a CISCO co-sponsored study with the Saudi government (see <http://www.enn.ie/frontpage/news-9679757.html>). Intrigued by this finding, we embarked on a thorough description and critical analysis of Saudi Arabia’s e-government, a late comer in the region but advancing rapidly with significant leaps in e-government readiness rankings, though not really at European levels yet. Using the stage model of e-government, this manuscript first describes the genesis and development of Saudi’s e-Government and then surveys government presence online. The second part of the paper identifies major challenges facing Saudi e-government namely, government transformation and reform, e-citizen participation, evaluation of e-government and the ensuing accountability and transparency requirements, interoperability of e-government platforms, and

managing the e-government program. While the paper is mostly descriptive in the first part, it delves into analytical issues in raising challenges about Saudi e-Government in the second part.

1.1 Infrastructure in Saudi Arabia

The Saudi Arabian government has undertaken an extensive ICT development and telecom sector reform starting in 1998. The chart below plots the timeline of this ambitious reform plan (AlSabti, 2005), and some of the projects details are further discussed in a later section.

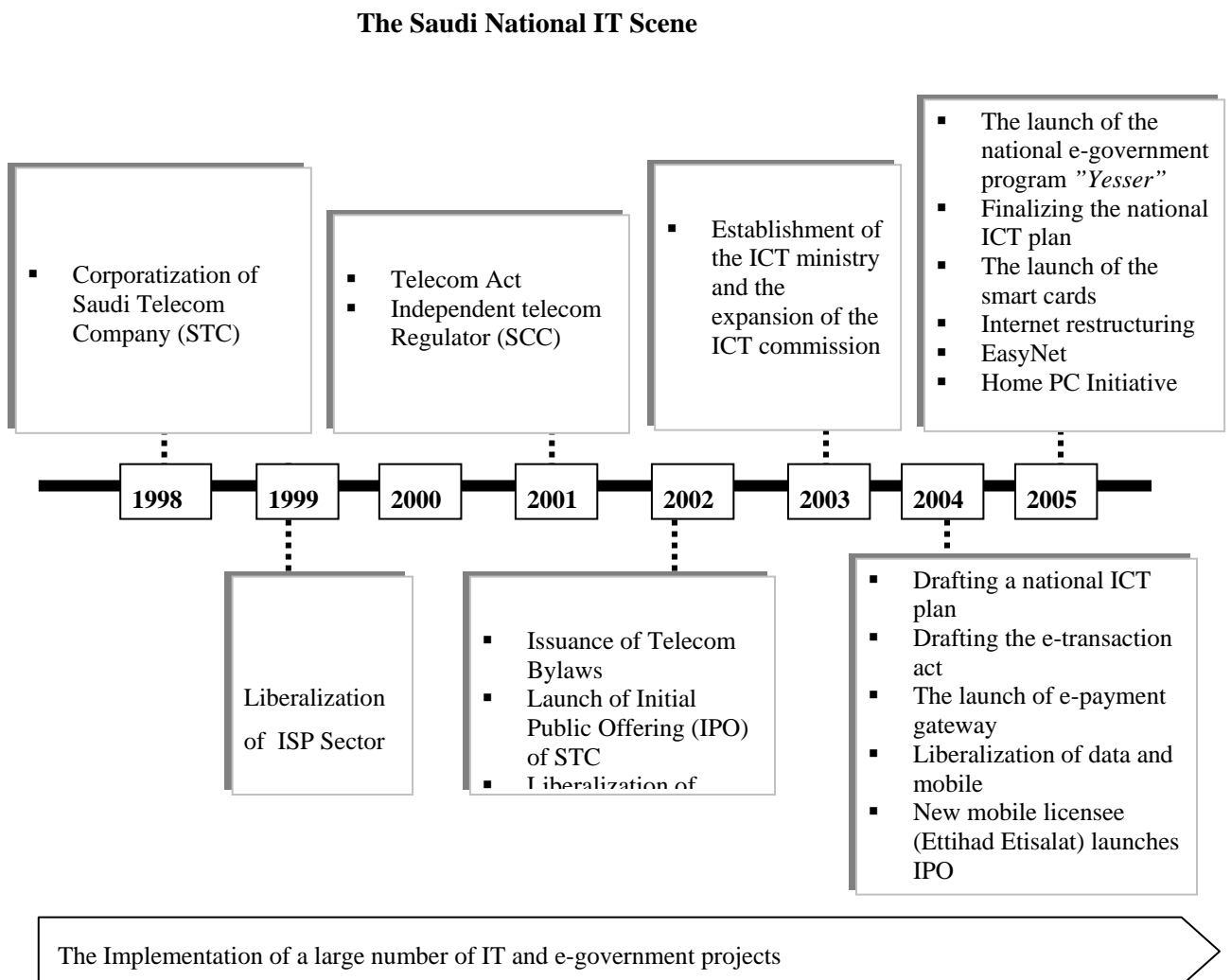


Figure 1: National ICT plan in Saudi Arabia (Adapted from AlSabti, 2005)

The major programs and initiatives of Saudi Arabia's National ICT Plan are listed below:

- *Home PC Program:* The Home PC Initiative is a Public-Private-Partnership with the aim of delivering one million PCs to Saudi homes within 4-5 years.
- *EasyNet:* EasyNet was introduced to reduce Internet access barriers and stimulate its usage and penetration in the country.

- *e-Award*: A yearly contest (e-Award) is conducted to promote and recognize local initiatives, innovation, and contributions to e-services and applications.
- *e-Government Program*: This is the cornerstone of the Saudi's ICT plan and will be discussed in this paper.

2. SAUDI E-GOVERNMENT PROGRAM

2.1 Stage model of e-government

Five basic stages of e-government were identified to describe the evolution of government on-line presence from emergent presence or basic site, to enhanced presence or e-publishing, interactive, transactional, and networked presence or holistic. The figure below illustrates the stage model of e-Government evolution. A detailed description of each stage is provided in Appendix A.

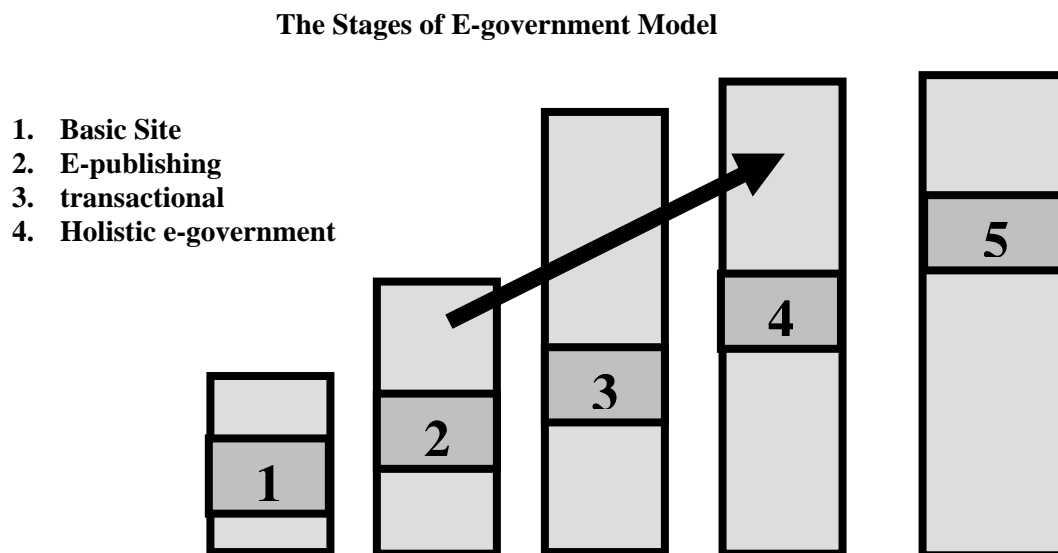


Figure2: Stages of e-Government Model (Adapted from NAO, 2002)

2.2 Genesis of Saudi e-Government

Though it was founded by a supreme royal decree in 2003, the Saudi e-government program did not actually start until 2005 (see Figure 1). It includes 150 main services and more than 1,000 subsidiary services by 40 government agencies (Arab News, 2006). It was launched with the following objectives (see <http://www.yesser.gov.sa/>):

- 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.

Within this framework, SR 3 billion (US \$800 million) have been allocated to set up infrastructure facilities required for providing the 150 e-government services within the next five years (Arab News,

2006). However Madar Research (2005) estimates the cost of a working e-government infrastructure in Saudi Arabia to well over \$5 billion.

2.3 The Saudi e-Government Vision and Strategy

The vision for Saudi Arabia's e-government initiative is purportedly user-centric and focuses on a number of aspects which all revolve around the central notion of providing better government services to the user. Users are understood here as individuals (citizens and expatriates), businesses and government agencies. The user-centric vision for Saudi Arabia's e-government initiative is summarized by the following vision statement:

“By the end of 2010, everyone in the Kingdom will be able to enjoy – from anywhere and at anytime – world class government services offered in a seamless, user friendly and secure way by utilizing a variety of electronic means” (<http://www.yesser.gov.sa/english>)

The e-Government program, dubbed Yesser or ‘facilitate’, is slated to be executed over a five-year period, through two parallel tracks. The first track lasting two years would provide the basic program requirements, and execute a number of pilot e-government projects, selected for high revenue, quick results, and relatively low implementation costs. The second track, covering the whole five-year period, formulates the program’s execution plan, identifies the priorities, and sets policies, procedures, specifications, and regulations. It includes 26 specific goals, 62 implementation policies, and 98 projects (AlSabti, 2005).

The Yesser program's role in Saudi's e-government initiative is that of an enabler and facilitator: it enables the implementation of individual e-government services by ministries and other government agencies, on the one hand, by building the national infrastructure and defining common standards which these agencies can use; and on the other hand, by providing best practice examples and accompanying implementation of pilot services. Moreover, it will ensure an appropriate level of coordination and collaboration between the implementing agencies. However, each government ministry in Saudi Arabia is still in charge of its own digital transformation.

Appendix C briefly describes the major pilot e-government projects that were developed under the umbrella of YesseR. In the section below we attempt to draw an approximate picture on its current state of affairs.

2.4 Government Online Presence in Saudi Arabia

We compiled the following data based on a thorough survey of both printed and on-line sources, as well as accessing, browsing, and analyzing over 25 government sites in the Kingdom (survey results summarized in *Appendix B*).

Currently, around 60% of Saudi Arabia’s cabinet ministries have online presence (Madar Research, 2005) namely 13 ministries out of 22. This has not changed since an earlier study by Abanumy et al. (2003) who found that only 13 ministries had on-line presence while 8 did not. We have visited the sites and browsed through the services they provide (*see appendix B for details*). Generally, the sites provide bilingual (Arabic/English) support, and are basically information sources on various requirements for transactions, policies and regulations; which is typical of “enhanced presence or stage II” of the e-government stage model mentioned earlier (see Appendix A). Most sites provide downloadable forms for payments and license renewal, as well as contact and other basic information; a feature of “interactive presence or stage III e-government.”

The Chambers of Commerce and Industry site (<http://www.guraf.org/>) provides a unique service, wherein users can scan and e-mail their signatures for authentication and receive an electronic certificate in return (to be printed in color); this is the closest to a proper online transaction or stage IV e-government.

Likewise, the Ministry of Pilgrimage “Ministry of Hajj” site provides online visa services for visitors which might be considered a stage IV service. It was designed as an e-government solution that could benefit Muslims worldwide by enabling seamless information-sharing between government agencies and the vendors that provide accommodations and other travel services to pilgrims. The Ministry of Hajj portal is not yet open to the public, and thus pilgrims and travelers access the information resources via approved intermediaries such as travel agents. The portal has been flourishing, allowing for a 35 percent increase in the number of pilgrims to Saudi Arabia during the first year alone (UNDP, 2005). Sejel Technology, a consortium of local companies, was founded to oversee development and operation of the new infrastructure, and also to assume responsibility for managing the visa process to pilgrims on behalf of the Ministry of Hajj (see <http://www.sejeltech.com/>).

Besides the Ministry of hajj portal, none of the government ministries’ sites, portals, or on-line services, allowed for on-line transacting; at best, the passport department in the ministry of interior provided on-line service inquiries (<http://www.passport.gov.sa>).

In summary, the current government online presence in Saudi Arabia is between stages II and III with work under progress to cross to stage IV; most sites provide G2C services as well as G2G and G2B for some. The table in *Appendix B* provides detailed information on the major sites we visited and evaluated.

Put in perspective however, and over the last three years (2003 - 2005), Saudi Arabia has consolidated its e-government offerings, resulting in an impressive improvement in its percent utilization of all five stages of the stage model (see table 1 below). The UN report (2005) shows a breakdown of Saudi Arabia’s service delivery by stage of e-government evolution (stage I = 100%, stage II = 62%, stage III = 39%, stage IV = 0% and stage V = 20%)

Progress in e-government, selected countries			
<i>Percent utilization in all five stages</i>			
	2003	2004	2005
Malta	49	70	75
Hungary	27	51	67
Slovenia	38	49	56
Czech republic	30	52	56
Malaysia	42	46	55
Ukraine	30	53	55
Saudi Arabia	16	29	36
Lebanon	22	23	32
Qatar	12	8	31
Iran	13	15	28

Table1: Progress in e-government, selected countries percent utilization in all five stages (adapted from UN, 2005)

2.5 Saudi Arabia’s e-Government Readiness

Based on the UN reports of 2004 and 2005, Saudi Arabia made a significant progress in e-government readiness both on the world and GCC levels with massive investments in ICT infrastructure and a more prominent Web presence as major government projects went on-line (see AlSabti, 2005). e-Readiness is defined as a country’s measure of its e-business environment, a collection of factors that indicate how amenable a market is to Internet-based opportunities (The Economist Intelligence Unit, 2005). The UN Global e-Government Survey 2005 ranked Saudi Arabia as number 80 worldwide, improving from number 90 position in 2004 with an index of 0.41 (best being 1.00), Saudi Arabia ranked 10 (2005) in the West Asia region which includes Cyprus and Turkey (see table 2 below).

		Index	Rank in:		<i>Change</i>
		2005	2005	2004	
1	Israel	0.6903	24	23	-1
2	Cyprus	0.5872	37	49	12
3	UAE	0.5718	42	60	18
4	Bahrain	0.5282	53	46	-7
5	Turkey	0.496	60	57	-3
6	Qatar	0.4895	62	80	18
7	Jordan	0.4639	68	68	0
8	Lebanon	0.456	71	74	3
9	Kuwait	0.4431	75	100	25
10	Saudi Arabia	0.4105	80	90	10
11	Georgia	0.4034	83	94	11
12	Azerbaijan	0.3773	101	89	-12
13	Armenia	0.3625	106	83	-23
14	Oman	0.3405	112	127	15
15	Iraq	0.3334	118	103	-15
16	Syria	0.2871	132	137	5
17	Yemen	0.2125	154	154	0
	Average	0.4384			

Table 2: Saudi Arabia's e-government readiness

This improvement has resulted from a 70% improvement in its Web measure index. The Web measure index reflects the service levels provided by e-government web sites and portals (i.e. on-line presence). Transactional web sites for instance will have a higher index than purely informational ones. The number of services covered also increases this index. This index generally reflects content and delivery of e-government services. This is what is keeping other more developed GCC e-government programs such as Dubai's or Bahrain's from rising to the top in the world's hierarchy of e-government preeminence.

The two other indices complementing the Web measure index to make up the UN e-Government readiness index are the telecommunication infrastructure index and the human capital index. Basically, high e-government readiness boils down to a simple equation; government services are reengineered and delivered over a ubiquitous Internet infrastructure to educated citizens. The index is low if government services cannot be transformed for e-delivery because of resistance to change and a deeply entrenched bureaucratic culture; access to e-government is limited because of the limited reach of the Internet infrastructure; or citizens lack the awareness or literacy required to use e-government services.

Saudi scores high on the human capital index which means that citizen readiness would not be an issue. However and despite massive investments in ICT, it is expected to hit a snag as the Web measure index is not as elastic as the other two and requires more than financial investments to rise significantly (Sahraoui, 2005).

3. CRITICAL CHALLENGES FACING SAUDI E-GOVERNMENT

e-Government projects, programs, policies, or strategies differ quite drastically depending on the context within which they are developed and implemented. The challenges faced by governments and local authorities in devising new modes of governance are wide ranging depending on the scope of such e-government initiatives. Success generally depends on the ability of e-Government planners to identify challenges or contingencies and respond to them by integrating response mechanisms in the e-

government solutions provided or by scoping projects to fall between the cracks of insurmountable challenges. While many have expressed skepticism in Saudi's capacity to transform government towards more transparency and accountability, e-government could still provide a breakthrough in a country mired into a deeply entrenched bureaucracy. In the following sections, we attempt to identify the critical challenges that Saudi e-government has to face on the road to viability.

3.1 Government transformation and reform

E-government requires a coherent strategy, beginning with an examination of the nation's political will, resources, regulatory environment, and ability of the population to make use of planned technologies (InfoDev, 2002). One thing that can be said about the strategies adopted by GCC countries in general in relation to e-Government is that they are scanty and reactive at best. They are mostly configured as information technology plans rather than comprehensive IT-enabled governance plans (Sahraoui, 2005). Despite claims to the contrary, there does not seem to be a serious attempt to articulate a clear vision for reforming or transforming government through ICT. Focusing solely on technology solutions is driven by a bureaucratic culture that considers citizens as neither customers of government, nor participants in decision making (InfoDev, 2002). Yet media reports, conference and seminars abound about e-government milestones and achievements in citizen or customer-centric government. However most tend to look and sound like vendor sales pitches with strong political undertones. What this media hype does not usually present is how these strategies are prepared; who is involved? And how strategic choices are made? Indeed sound strategies cannot but come from a sound strategy making process as is the case in Europe for instance.

Ironically, the rudiments of a holistic and transformative e-government strategy exist in Saudi Arabia, at least on paper. It is part of a larger vision to move the country to the Information Society (AlSabti, 2005). The program is championed at the highest level of political leadership in the Kingdom. King Abdullah instructed all government officials and agencies to work for realizing the vision of electronic governance and make it a success (Arab News, 2006). King Abdullah is widely seen as the figurehead in driving e-commerce and e-government in the Kingdom (Madar Research, 2005). However Saudi Arabia has been overall the least receptive to the e-government wave in the region (with the exception of Oman may be), which is thought to be the result of the opposition of a largely bureaucratic civil servant body (Madar Research, 2005). In a study of the obstacles to e-government implementation in the educational sector, Alharbi (2006) found that educational, organizational, and political factors represented the major obstacles while financial, social and technological considerations weighted less negatively on the current state of e-government roll-out. He goes on to suggest that e-government be emphasized in the public administration curriculum to increase public servants awareness.

Hence and no matter how compelling the vision to transform the public sector into a seamless e-government is, the design-reality gap might be too wide to bridge (see Heeks, 2003). Indeed, Saudi Arabia is the most bureaucratic country in the region with a deeply engrained culture of anti-customer service. Accountability and transparency are alien to the core values of a system built otherwise on arbitrariness and privileges. While intentions and commitments at the highest level of leadership might be true and genuine, it is expected that 'YesseR' will be resisted in different quarters of government.

3.2 e-Citizen participation

The concept of e-government, beginning with an emphasis on improving efficiency and progressing towards a more customer-centric effort, is now being recast to include the transition towards a participatory government that seeks to realize e-democracy (Suh, 2005). So far, most e-government projects have emphasized the one-sided provision of on-line services rather than a two-way interaction and a reformulation of government role within a new democratic covenant with its citizens. Citizen participation can be clustered into two major categories, political and administrative (Suh, 2005). Of particular relevance to the role of citizens in e-government is administrative participation which seeks

to maximize the input of citizens in the planning, development, and implementation of government services on the Web. This is expected to be a more tangible reality at the local/municipal level than at the central government level. Political participation on the other hand, while portable through an e-government conduit is driven by factors extrinsic to the overall framework of e-government development. The question that arises especially in the case of Saudi Arabia is whether the focus will remain on the current one-way delivery of government services or if some form of administrative participation could be considered at a later stage. As for political participation, it might not be feasible at all in a country where international pressure had to bear strongly on the regime to accept to hold municipal elections with limited political stakes (see Hamzawy, 2005). Heeks (2003) argues that successful e-governments are those that minimize the gap between e-government design and the reality of government. In other words, Saudi Arabia should not venture into any participative design of its e-government if it is not already reflected into the reality of its current conventional government. Based on his experience with Korea's e-government, Suh (2005) advocates a staged approach to citizen participation:

“e-government begins as an efficiency oriented government that computerizes operations of government agencies and provides simple civil services for the purpose of improving work efficiency, then progresses to become a service-oriented government that seeks to enhance customer satisfaction by linking operations of different agencies and finally develops towards a participatory government where the people can play a leading role in public administration proceedings.” (p.9)

It is obvious that Saudi Arabia has barely engaged the process but in-line with Suh's thoughts, it is vital for administrative participation to be considered sometime down the road. The risk otherwise is for e-government to turn into an e-bureaucracy; being potentially worse than conventional bureaucracy as it carries a bigger element of impersonal interactions, hence less social accountability. Indeed, if anything the face-to-face interaction embedded into the existing administration is what is keeping the system from drifting completely into complete unresponsiveness. It is doubtful however that within the foreseeable future, e-government in Saudi Arabia reaches a stage wherein citizens take a leading role in interacting with the government. That would have to follow major administrative and political reforms in the Kingdom.

3.3 Citizen access, security and privacy

While the socio-political structure and bureaucracy in an aging government will probably seriously stall the evolution of G2C services into stage IV, the government is not the only one to blame as citizens are generally thought to be skeptical in their uptake of government changes. This has been coined as the “Hard-Soft Gap” (Heeks, 2003) wherein e-government systems are plagued by soft factors - people, politics, emotions and culture. When a hard e-government design meets a soft reality, there is a large gap, and a strong likelihood of failure. Saudi Arabia is a fertile soil for such a gap with an Internet penetration rate of only 14.87%, ranking fifth among the six GCC countries, leaving only Oman behind with 8.62%. The illiteracy rate is quite high as well (above 30%), which combined with technophobia and the not too supportive conservative religious establishment wielding quite a bit of influence on the masses, means that government services delivered over traditional channels will be around for quite sometime.

A related access feature is accessibility for disabled citizens. With 4% of Saudi population being disabled, this ought to be tackled. Indeed, Abanumy et al. (2005) assert that the government websites of Saudi Arabia and Oman need considerable efforts to satisfy the accessibility requirements of W3C's WCAG guidelines (see W3C, 2006).

The Kingdom does not fare much better with regards to the right to privacy of citizens. In a report by Rutgers university on the performance of world cities on different e-government indicators of privacy, security, usability, content, service delivery, and citizen participation, Riyadh, the capital city of Saudi Arabia, scored zero in the privacy and security policy (Madar Research, 2005). This could be ascribed to the little appreciation for the right to privacy in the Arab world. Indeed Saudi Arabia has an established record of tightly controlling all telecommunication conduits including the Internet.

“The Internet is still subject to multi-level filtering through an elaborate system of proxies and human censors, which is inadvertently hindering the flow of information and access to knowledge that is useful for businesses and researchers...KACT [King AbdulAziz City of Science and Technology] acts as a firewall for the whole kingdom, blocking anything viewed as unsuitable.” (Madar Research, 2005).

All of the above poses a serious credibility concern over Saudi e-government. It is vital that citizens concerns about personal data leaks that can come from information disclosures, infringement on privacy, or system instabilities due to disasters or cyber crimes be explicitly addressed before YesseR can engender any significant level of trust among its users. The establishment of the National Center for Digital Certification to provide an integrated system for management of the public key infrastructure (see <http://www.yesser.gov.sa/>) might ease the security concerns of business users but is unlikely to do so with regular citizens. Consequently, the objectives of 75% adoption rate and 80% satisfaction with e-government by 2010 (see <http://www.yesser.gov.sa/>) might not be reachable within the specified time horizon. Prospects are probing however if one is to rely on the result of a CISCO study in 2005 that found that ICT had helped Saudi Arabian government departments boost customer satisfaction rates by 44% and that the number of citizens using e-services had risen by 34% (see <http://www.enn.ie/frontpage/news-9679757.html>).

3.4 Managing the e-government program

One major hurdle that has been slowing down the development of Saudi e-government is the absence of a central authority to oversee the implementation of the program. The council of ministers voted a resolution on March 27th, 2006 to enforce implementation rules for e-government (see http://www.yesser.gov.sa/english/documents/e-GovernmentRules_en.pdf) but made it a post hoc requirement for government entities to prove conformance, hence thwarting early corrective actions if necessary. Indeed and despite being part of an overall IT plan, there is no identifiable entity responsible for the digital migration of the entire government. Government organizations are to separately implement their slice of the e-government plan including re-engineering their processes for the on-line delivery of services. While the e-government portal www.yesser.gov.sa provides some details on initiatives planned, it lacks relevant information on objectives, timelines, and foremost what has been accomplished. Indeed, “there is no single, comprehensive e-government project which enjoys top political backing to oversee scheduled execution of a cohesive, clearly defined plan to install e-government in the various government institutions...The lack of a convincing and detailed master plan for e-government in countries like Saudi Arabia and Oman could also further delay their ability to design and implement the appropriate e-services” (Madar Research, 2005).

Initially, the Saudi Computer Society was tasked with leading the national IT drive including e-government. It founded a secretariat made up of experts from both the private and public sector with the aim of widening the participation in elaborating national IT strategies. However it is not clear whether anything tangible has come out of this structure. The plan may be bogged down with politics and disagreements (Madar Research, 2005) and there is no mention of this major drive either in the Saudi Computer Society web site (see <http://www.computer.org.sa/>) or the e-government portal (see <http://www.yesser.gov.sa/>). The annual e-government forum that was supposed to keep the public and professionals informed of developments in Saudi e-government has not been held since 2003 and its third session was postponed until September 2006. The lack of clear ownership over the umbrella e-government project in Saudi Arabia epitomized by its decentralized development approach will ultimately prove a hindrance when attempts will be made to enact YesseR as a one stop portal, unless outsourcing is considered as a strategic alternative. Indeed, the best online success has been witnessed with non-government corporations like Saudi Telecom STC, which provides efficient online transactions. On the other hand SADAD, the payment gateway described in Appendix D, is an icon of

Saudi e-government success which relies on an outsourcing company, Sejel Technologies (http://www.sejeltech.com/FLASH/EGOV_en.html).

It is likely that fully-government developed e-government projects will lead to partial or total failure, and this seems to be more universal than previously thought (Heeks, 2003). Outsourcing the portal service itself and not just the infrastructure and architecture could be keys to success as proven with the SADAD and Omrah projects examples (see Appendix D). Indeed YesseR will likely be better off outsourcing its core projects with government involvement increasing as the different projects move up through the stages of e-government development. The main reason is the "Private-Public Gap"; the public sector being fundamentally archaic and resistant to change compared to the private sector. Saudi Arabia has government departments as old as 70 years, run by bureaucrats with unlimited resources and almost untouchable status.

3.5 Evaluation, accountability and transparency

Saudi Arabia seems to be lacking one clear vision and strategy for the deployment of e-government services. Decrees, new structures and restructuring have done little to give an impetus to a serious transactional government presence on the net. Experts have suggested that the King's office should be in charge of the e-government project with the individual in charge having the rank of a minister (Rada, 2006); some sort of a fantasy about an e-Governor who might be even at an executive ministerial level.

Accountability - or the lack thereof - in terms of fulfilling objectives or failing to set clear ones in the first place is an obvious concern; this could be in partly due to the *modus operandi* of government where royal family members are also ministers and government officials, but this might as well be common in all government departments not accustomed to be driven by clear objectives.

The absence of a credible research environment is also a problem. While writing this paper, a database search on Saudi e-government yielded hardly anything beyond commissioned studies by official bodies like the UN, the World Bank and affiliate institutions, or vendors. The annual report of the Madar Research Group (2005) on GCC e-government, which is largely descriptive, was the single most important reference available. Virtually no academic or analytical study is anywhere to be found. While this is partly due to the primarily teaching focus of universities in the region, access to reliable data is virtually impossible in Saudi Arabia. The contribution of this paper in its comprehensive account of e-government in Saudi Arabia thus becomes more evident.

Nonetheless and against the backdrop of this non-transparency, e-government is essentially government online, hence by its very nature difficult to hide. Most of the data that was used in this manuscript was indeed collected on-line. This bodes well for e-government research as it will be increasingly difficult for governments in the region to conceal the outcome of their e-government projects. The annual UN ranking is an illustration of this.

3.6 Cultural and soft barriers

As there is no universal model of e-government implementation, it is essential to take into consideration cultural, demographic, political, and economic influences and idiosyncrasies. This would reduce the design-reality gap that was found to be the major reason for failures of e-government projects throughout the developing world (See Heeks, 2003). However Saudi Arabia similarly to all countries in the region relies heavily on global consultants to put in place e-government projects. This inevitably leads to little consideration of soft factors in the development of e-government. The idea behind the executive committee headed by the Saudi Computer Society could have been a panacea for embedding Saudi e-government with the requisite responsiveness to soft aspects but it is a certainty that such a committee could not impose its vision and whatever recommendations it could come up with on the turf minded Saudi bureaucrats. That Saudi e-government is backed at the highest level of

the political leadership does not change much to the equation because political will hardly translates into concrete action in a multi-layered and tortuous hierarchical system of decision making. Moreover, it is very hard to get a very conservative and to some extent closed society to accept the concept of the knowledge based society centered on platforms like the Internet and e-government because of the perceived threats of the Internet, namely its assimilation with the objectionable content of the Web. In some quarters of the Saudi society, there are those who still object to TV let alone the Internet. e-Government projects should involve a lot of marketing research in the form of customer-focus groups, simulated test marketing and local pilots whenever possible, before attempting a national roll-out. Alharbi (2006) suggests that e-government implementation should be done gradually to soften its impact on the population.

3.7 Interoperability of e-government platforms

In the past, IT systems from all leading vendors (IBM, Oracle, Microsoft, Cisco, HP and others) have been dumped in Saudi Arabia with notions of being already tested (sometimes in places as close and similar as Abu Dhabi). Similarly and as early as 2002, the Microsoft Corporation landed the project to build the Saudi e-government portal using XML (Madar Research, 2005). Other major vendors involved in Saudi e-government are IBM, Cisco, HP, and Oracle. This is typical of projects in the region where open standards are often compromised by proprietary vendors thus thwarting the openness and interoperability of the e-government platforms being deployed. Indeed, XML alone does not guarantee interoperability (Tam & Wong, 2003) and it is expected that proprietary vendors would attempt to lock out competitors through proprietary standards. Although an interoperability framework with basic standards is posted on the Saudi e-government portal (see <http://www.yesser.gov.sa/documents/YEFI.pdf>), the risks of non-conformance are still significant in the absence of an overarching authority to enforce it on the different government agencies and vendors.

Moreover because each ministry is going it alone, it is doubtful that requirements for compatibility, consistency, uniformity and interoperability will be met. Disparate projects will ultimately pose a challenge when it will be time to integrate them within a unified e-government project and whenever it will be possible to interconnect the various ministry systems at a technological level, administrative barriers are thought to become a hurdle. One positive lesson can be learned from the SADAD project (government e-payment gateway, see Appendix D) however which leveraged the existing ATM infrastructure (Automatic teller machines) to add value to an already existing platform and build a robust and secure payment infrastructure for Saudi e-government.

4. E-GOVERNMENT IN SAUDI ARABIA - COMMENTS AND CONCLUSIONS

e-Government is essentially government on-line and its performance is thereby largely determined by the quality of the latter. After its initial successful strides, Saudi e-government will be increasingly limited by the same factors that hinder conventional government, namely bureaucracy, lack of accountability and transparency, and the absence of democratic traditions. But does that mean that the Saudi e-government is condemned to failure? Not necessarily if the challenges identified above are recognized and tackled appropriately. As Suh (2005) stated in relation to the Korean experience, e-government should pursue a strategy of efficiency in the first phase and consider government transformation once the objectives of efficiency have been met. From the developments above, it is clear that Saudi e-government is steadily advancing in the path of efficiency but it will not be long before it is faced with governance issues that will determine the ultimate outcome of its overall program.

On the bright side, though, Saudi Arabia never seems to lack resources or resolve; this has been summarized in the phrase “in Saudi Arabia nothing is impossible but nothing is easy.” There are indeed clear indicators of change and we believe the e-government dynamic will push for significant

breakthroughs. Competitive pressures from neighboring countries in the region such as Qatar, Bahrain, Jordan and the UAE should bring out real value from the sleeping giant.

5. REFERENCES AND FOOTNOTES

- Abanumy A., Al-Badi A., Mayhew P., 2005. "e-Government website accessibility: In-depth evaluation of Saudi Arabia and Oman." *The Electronic Journal of e-Government*, Vol 3, Issue 3, pp. 99-106.
- Alharbi, S. 2006. "Perceptions of faculty and students toward the obstacles of implementing e-government in educational institutions in Saudi Arabia, Unpublished dissertation, West Virginia University, [On-line Abstract available <http://eidr.wvu.edu/etd/documentdata.eTD?documentid=4560>]
- AlSabti, K. 2005. "The Saudi Government in the Information Society", *11th GCC e-Government Forum*, May 21-25, Dubai, UAE.
- Arab News, 2006. "King allocates SR3bn for Saudi e-government program" http://www.menafn.com/qn_print.asp?storyid=1093112095&subl=true [accessed May 30, 2006]
- CIA, 2006, World Fact Book: Saudi Arabia (<http://www.cia.gov/cia/publications/factbook/geos/sa.html>) [accessed April 6th 2006]
- CICT, 2005. "Saudi Arabia - towards the Information Society" Communications and Information Technology Commission, Saudi Arabia, November.
- Gitex Times Staff, 13 April 2005, "Connected Kingdom" (<http://www.itp.net/features/details.php?id=2551&category=>) (accessed April 6th 2006)
- Hamzawy, A. 2005. Saudi Municipal Elections: Gradualism of Reform and Traditional Politics, Carnegie Endowment for International Peace – Publications [accessed 28 May, 2006].
- Heeks, R. 2003. 'Most eGovernment-for-Development Projects Fail: How Can Risks be Reduced?' *iGovernment Working Paper Series*, Institute for Development Policy and Management, University of Manchester, Manchester, UK, <http://idpm.man.ac.uk/publications/wp/igov/index.shtml> [30 December 2004]
- InfoDev 2002. *The E-Government Handbook for Developing Countries*. A project of InfoDev and the Center for Democracy & Technology, November, Washington, D.C.
- Leatham, S. 2006, "Saudi Arabia forges ahead with e-government rollout." <http://www.enn.ie/frontpage/news-9679757.html> [accessed May 30, 2006]
- Lyngsat Network, 2006. "Free satellite TV from Saudi Arabia" in (<http://www.lyngsat-logo.com/tvcountry/sa.html>) [accessed April 4th 2006]
- Madar Research, 2005. e-government in GCC, Chapter VI Saudi Arabia, Madar Research Group, Dubai Media City, UAE, pp. 65-82, June.
- MCIT, 2006. The Ministry of Communications and Information Technology, Saudi Arabia website (<http://www.mcit.gov.sa/default.asp?l=EN>) [accessed April 4th 2006]
- NAO 2002. 'Government on the Web II Report'. *The UK's National Audit Office*. http://www.governmentontheweb.co.uk/access_reports.asp [31 May 2005]
- Rada, J. 2006. "Our E-Bureaucracy Is Wrapped in Red Tape" Presentation at the Saudi CIO Summit, Riyadh, 21 February. (<http://www.arabnews.com/?page=11§ion=0&article=78164&d=21&m=2&y=2006>) [accessed April 7th 2006]
- Sahraoui, S. 2005. e-Government in the Arabian Gulf: government transformation vs. government automation, in proceedings of the e-government workshop '05 (eGOV05), Brunel University, West London, 13 September, 2005 [on-line: <http://uxisweb1.brunel.ac.uk/iseingsites/egov/eGOV05/proceedings.htm>].
- Suh, S. 2005 "Promoting Citizen Participation in e-Government" (From the Korean Experience in e-Participation). Available on the Worldwide web. URL: <http://unpan1.un.org/intradoc/groups/public/documents/un/unpan020076.pdf> [August 24, 2005].
- Tam M., Wong K. 2003. "Web-services for e-government – a marriage for interoperability," in proceedings of IADIS international conference on e-Society, Lisbon, Portugal, pp. 841-844.

- The Economist Intelligence Unit, 2005. The 2005 e-readiness rankings, whit paper, http://graphics.eiu.com/files/ad_pdfs/2005Ereadiness_Ranking_WP.pdf [accessed May 30, 2006]
- The Asian Banker, 2006. "Sadad Case Study: Saudi Arabia offers electronic options for paying bills" [http://www.theasianbanker.com/A556C5/DwdPresentation.nsf/5D119E71D9DC9AB44825711C000AA8C9/\\$File/SADAD_CaseStudy.pdf](http://www.theasianbanker.com/A556C5/DwdPresentation.nsf/5D119E71D9DC9AB44825711C000AA8C9/$File/SADAD_CaseStudy.pdf) [accessed April 7th 2006]
- UN 2005. *Global E-Government Readiness Report 2005: From e-government to e-inclusion*. United Nations, New York.
- UNDP, 2005. *Virtual Consulate Primer: How to Design and implement an e-Visa programme*. UNDP Publications, Bratislava Regional Center, Slovak Republic, pp. 19-26.
- W3C, 2006. Web Content Accessibility Guidelines 2.0, working draft 27 April 2006 <http://www.w3.org/TR/2006/WD-WCAG20-20060427/>

6. APPENDICES

6.1 Appendix A

(Adapted from the United Nations Global E-Government Readiness Report 2005)

Web measure assessment model: stages of e-government evolution

Emerging presence or basic site (Stage I): Representing information, which is limited and basic. The e-government online presence comprises a web page and /or an official website; links to ministries/departments of education, health, social welfare, labor and finance may/may not exist; links to regional/local government may/may not exist; some archived information such as the head of states' message or a document such as the constitution may be available on line, most information remains static with the fewest options for citizens

Enhanced presence or e-publishing (Stage II): The government provides greater public policy and governance sources of current and archived information, such as policies, laws and regulation, reports, newsletters, and downloadable databases. The user can search for a document and there is a help feature and a site map provided. A larger selection of public policy documents such as an e-government strategy, policy briefs on specific education or health issues. Though more sophisticated, the interaction is still primarily unidirectional with information flowing essentially from government to the citizen

Interactive presence (Stage III): The online services of the government enter the interactive mode with services to enhance convenience of the consumer such as downloadable forms for tax payment, application for license renewal. Audio and video capability is provided for relevant public information. The government officials can be contacted via email, fax, telephone and post. The site is updated with greater regularity to keep the information current and up to date for the public

Transactional presence (Stage IV): This allows two-way interaction between the citizen and his/her government. It includes options for paying taxes; applying for ID cards, birth certificates/passports, license renewals and other similar C2G interactions by allowing him/her to submit these online 24/7. The citizens are able to pay for relevant public services, such as motor vehicle violation, taxes, fees for postal services through their credit, bank or debit card. Providers of goods and services are able to bid online for public contracts via secure links

Networked presence or holistic (Stage V): This represents the most sophisticated level in the online e-government initiatives. It can be characterized by an integration of G2G, G2C and C2G (and reverse) interactions. The government encourages participatory deliberative decision-making and is willing and able to involve the society in a two-way open dialogue. Through interactive features such as the web comment form, and innovative online consultation mechanisms, the government actively solicits citizens' views on public policy, law making, and democratic participatory decision-making. Implicit in this stage of the model is the integration of the public sector agencies with full cooperation and understanding of the concept of collective decision-making, participatory democracy and citizen empowerment as a democratic right.

6.2 Appendix B

(Online Survey Conducted on April 6th 2006)

	Authority	Application Download	Application Online	Transaction Inquiry	Transaction Online	English Version	Stage	URL
1	The E-government Program	No	Yes	Yes	No	No	?	www.gov.sa
2	Communication and Information Technology Commission	Yes	Yes	Yes	No	No	II	www.citc.gov.sa
3	Saudi Telecom	Yes	Yes	Yes	Yes	Yes	IV	www.stc.com.sa
4	Ministry of Agriculture	Yes	No	Yes	No	No	III	www.agrwat.gov.sa
5	Ministry of Civil Service	Yes	Yes	Yes	No	No	III	www.mcs.gov.sa
6	Ministry of Commerce and Industry	Yes	Yes	Yes	No	No	III	www.commerce.gov.sa
7	Council of Saudi Chambers of Commerce and Industry	Yes	Yes	Yes	*	Yes	III	www.saudichambers.org.sa
8	Ministry of Defense and Aviation	Yes	Yes	No	No	Yes	III	www.gaca.gov.sa
9	Ministry of Water and Electricity	Yes	Yes	No	No	No	III	www.mow.gov.sa
10	Saudi Ports Authority	No	No	No	No	Yes	III	www.ports.gov.sa
11	Ministry of Interior Passport Authority	Yes	No	Yes	No	No	III	www.passport.gov.sa
12	Ministry of Health	No	No	Yes	No	No	III	www.moh.org.sa
13	Ministry of Education	No	No	No	No	Yes	III	www.moe.gov.sa
14	Royal Embassy of Saudi Arabia - London	Yes	Yes	Yes	No	Yes	III	www.mofa.gov.sa
16	Ministry of Hajj	No	No	No	No	No	III	www.hajinformation.com
16	Ministry of Higher Education	Yes	No	Yes	No	No	III	www.mohe.gov.sa
17	Ministry of Communications and Information Technology (IT)	No	No	No	No	Yes	III	www.mcit.gov.sa

6.3 Appendix C

Pilot projects of the e-Government Program “Yesser”

The Governmental Services Surveying and Prioritizing Project (G2C, G2B, and G2G)

This project aims at identifying the major services that government organizations provide to individuals G2C, the business G2B, and public sectors G2G. The project examines their characteristics and current electronic status. Additionally, these services are to be prioritized for their introduction electronically. A number of pilot projects in the first phase of the program will be identified as well

The Government Services Portal Project (G2C)

The objective of this project is to build a national portal for government services. The portal provides information on such services, defines them, states their requirements and includes their electronic forms, if available. This represents the first phase of the government services portal. Later phases of the portal's development will take place within the second track of the program's work plan

The Electronic Forms Project (G2G)

The objective of this project is to apply the concept of electronic forms to typical and common government transactions performed between government organizations. These transactions may either represent some sort of data exchange on paper forms or regular reports that take fixed formats. The main idea of the project is to apply the concept of electronic forms to G2G transactions; using either bar-coded hard forms - that may be electronically scanned - or electronic files that can be generated, exchanged securely, and read electronically

SADAD Electronic Bill Payment System EPBS (G2B and G2C)

SADAD (<http://www.sadad.com>) was established by the Saudi Arabian Monetary Agency SAMA to be the national Electronic Bill Presentment and Payment EBPP service provider for the Kingdom of Saudi Arabia

SADAD is to facilitate and streamline bill payment transactions of end consumers through all channels of Saudi Arabia's banks.

SADAD aims to link all the banks and bill payees in Saudi Arabia in the near future. Based on world-leading e-billing and payment consolidation technology (CheckFree i-Series™) SADAD electronic bill payment service went live in 2004. Currently, over 85% of Saudi Arabia's eight million bank account holders routinely use some 5,000 countrywide Automatic Teller Machines ATMs located in banks, shopping centers, and other public places

They also use bank branches, telephone banking, Internet banking, and about 45,000 “Point-of-Sale” POS terminals around the country

SADAD is the most powerful e-government form that is currently in use in Saudi Arabia. SADAD is a major requirement for the wider implementation of e-government and e-trade plans, this explains why it received tremendous support from the Saudi government

Al-Madina Al-Munawwarah e-Government Project (G2C, G2B, and G2G)

Mostly under development and currently providing stage II and III e-government services, this project promises a gateway with both transactional and networked presence (stages IV and V)

The implementation of e-government is envisioned to improve both the way the government agencies in Al-Madinah Al-Munawwarah operate internally as well as the delivery of services to the public. It seeks to improve the convenience, accessibility, and quality of interactions with citizens, residents and businesses. It will improve information flows and processes within government agencies to improve

the speed and quality of policy development, co-ordination, and enforcement. This project is an example of G2C, G2B and G2C service (<http://www.almadinah.gov.sa/default.asp>)

Saudi Project for Electronic Data Interchange (SaudiEDI) (G2G, B2B and G2B)

The Public Investments Fund of the Ministry of Finance is implementing the Saudi Project for Electronic Data Interchange (SaudiEDI) with the aim of improving speed and ensuring transparency in business. This project is concerned with international trade services (import and export), in other words “e-Trade” in Saudi Arabia. It would include the electronic interchange of the consignment manifest information, delivery papers, and the various items of import-export information among the different concerned agencies, like the Customs Department, the General Ports Department, shipping agents, clearing agents¹⁴, etc. This is a G2B stage IV example of e-government. The following web address points to the window front of the project while work in underway (<http://www.saudiedi.com/trade/sau/corp/index.htm>).

SaudiEDI includes the **SANAM Service** (The SANAM Delivery Order Management Service, the SANAM Import Manifest Submission Service, the SANAM Import Declaration Service, the SANAM Export Manifest Submission and Export Declaration, and the SANAM Export Manifest Submission)

The Omrah Project (G2C and G2B)

The Omrah project¹⁴ aims at issuing entry visas for those wishing to carry out Omrah rituals in the holy places in Saudi Arabia. Such persons would be able to send their applications for visas electronically through their travel agencies abroad. Applications would then be processed electronically by the Ministries of Hajj, Foreign Affairs and the Interior, within 24 hours. This project will start at stage III evolving quickly into a stage IV e-government service

Smart Cards (G2C)

The Saudi Ministry of the Interior has given considerable attention to this technology since its introduction. Several studies have been undertaken, and a number of its staff have been trained on their use, development, and programming. Steps are being taken by the Ministry of the Interior, at present, for replacing the personal identity cards by smart cards. At a later stage, this project would also include integrating other official cards such as the driving license, and the family status card into the smart card.

Efforts are being made to introduce electronic passports, which represent one of the latest technological innovations in the world. One of the objectives of the Ministry of the Interior in this connection is to establish the infrastructure for the Public Key Infrastructure PKI, which would open the door wide for several smart card applications.

A successful smart card implies a stage IV e-government

Services Portal Project, Ministry of Interior (G2C)

The National Information Center NIC of the Ministry of Interior is building a portal for services offered to individuals. The portal will enable such individuals to obtain information on the ministry services for example requirements and relevant e-forms

The portal project includes the possibility of providing twenty services electronically plus setting up around 100 electronic kiosks. This project aims to start at stage III and evolve into stage IV