THE ROLE OF INTERMEDIARIES IN FACILITATING E-GOVERNMENT DIFFUSION IN SAUDI ARABIA

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Abstract:

Recent studies of e-government activity have highlighted adoption and diffusion issues as important subjects for rating e-government success. However in developing countries inadequate resources and limited citizens' capabilities regarding new e-government have resulted in low diffusion and adoption of e-government services. This paper examines the role of intermediaries, which can be played by a third party; in bridging the gap between e-government implementation and social reality, and looks at the roles a third party can add within the e-government services mechanism. This paper uses a case study approach in order to reflect e-government progress within the context of the Kingdom of Saudi Arabia (KSA) as one developing country. The result of this paper shows that intermediaries play an important role in the diffusion of e-services in relation to improving the availability, accessibility and enhancing privacy and security.

Key words: E-government, Implementation, Intermediaries, diffusion, adoption, KSA

1. INTRODUCTION

The internet and different information communication technologies (ICTs) are important gateways in e-government systems, and play a key role in services delivery. They provide a direct connection between service providers and their clients. Internet application has been proposed as an intimidation tool that threatens to bypass the role of traditional intermediaries as gateway service providers (Gellman, 1996). For example, if the infrastructure is implemented well it will impact the roles of traditional service channels due to the Internet and different ICTs making it possible for direct contact between organisations and their clients with a low transactions cost; this may result in the removal of the intermediary role in the services delivery channel (Janssen and Klievink, 2009). Disintermediation arguments are mainly based on reducing the cost of services transactions (Gellman, 1996; Malone *et al.*, 1987). As advances in the internet and different ICTs could reduce the transactions cost, intermediaries make their existence from gaining money to be the service provider between parties. This is particularly significant as most of the existing e-government systems fail to resolve the coordination between government and citizens (Heeks, 2003). In developing countries limited ICTs, lack of internet access, skills needed for the use of e-services (digital divide), and low trust in technology (AlSobhi *et al.,*2009 ; Heeks, 2003; Sahay and Avgerou , 2002) have resulted in low diffusion and adoption of e-government services. In the new developments of multi-channel services delivery, traditional intermediaries have become a central issue for developing countries to leverage

the e-government relationship with their stakeholders, government, citizens and business (Al-Sobhi *et al.,* 2009). The intermediary provides a trusted information channel gateway and also provides help and support (Bailey and Bakos, 1997; Sarker *et al.*, 1996), which may have an impact on citizens' usage toward e-government services(AlSobhi *et al.,* 2009).

As the aim of the e-government systems is to deliver e-services for different stakeholders, intermediaries have been widely used for years and have skills and knowledge on critical government factors that are necessary for successful government-to-citizen (G2C) e-government relationships (Al-Sobhi *et al.,* 2009). If the government principles with regard to the G2C relationship remain unchanged due to barriers similar to the lack of infrastructure (e.g. internet access), and low citizens' skills, an intermediary organisation can provide citizens with a useful access gateway and support for e-government services, especially if the traditional intermediary is consolidated alongside information technology (Bailey and Bakos,1997). Unlike top e-government countries, developing countries have limited resources with regard to e-government readiness which negatively affect their e-government development position. This needs additional attention from a strategy maker to bridge the lack of technical resources and skills necessary for a new e-government.

While a number of studies offered by researchers in developed countries promised to determine factors that encouraged citizens to use e-government services, relatively few researches have been offered in developing countries like the Arab area (AlSobhi *et al.,* 2009; AlAwadhi and Morris 2008; Al-Fakhri *et al.,* 2008). Among these countries is Saudi Arabia. As shown in the literature, one of the most significant current discussions in relation to the challenges and issues facing the e-government programme in Saudi Arabia is the lack of sufficient e-government studies (Dwivedi and Weerakkody, 2007; Al-Fakhri *et al.,* 2008). Precisely, research that could promise to explore the role of intermediaries in the e-government context is vitally important (Al-Sobhi *et al*., 2009). Therefore, understanding what influences citizens to adopt new e-government services promoted by the role of intermediaries has research value and implications for strategy makers and researchers. Thus, the contribution of this paper is to create a framework of the factors that influence e-government implementation in developing countries (hard factors), factors that impact citizens' adoption of e-government (soft factors), and the roles of intermediaries (third parties), which aim to reduce the gap between e-government readiness 'reality' and citizens ability to adopt the new e-services. The authors of this study look at what value is added by an intermediary to citizens and government as a possible subset of the facilitating conditions of Saudi Arabia's e-government infrastructure (Al-Sobhi *et al.,* 2009). Further, a considerable amount of literature has been published on investigates factors that that significantly contribute to citizens' intention to use e-government from the point of view of internet applications and different ICTs (Carter and Belanger, 2005; Warkentin *et al.*, 2002). The issue of adoption factors among citizens and new intermediaries has rarely been mentioned in the literature of e-government diffusion and adoption. Furthermore, the citizens' adoption of e-government in many developing countries including Saudi Arabia has not progressed as expected (Al-Sobhi *et al.,* 2009; Al-Fakhri *et al.,* 2008). Thus, to what extent an intermediary can minimize factors that hinder e-government adoption is vitally important. Consequently, these issues encouraged the authors of this paper to generate questions such as, what are the challenges facing the take-up of e-government services in Saudi Arabia, and what are the roles that an intermediary could add to promote accelerated e-government development?

In order to undertake an exploratory study, this research focuses on Madinah, a city in Saudi Arabia. Madinah launched e-government services in 2003, and at present is considered to be the second most important city in Saudi Arabia. The rationale for selecting Madinah for this research is influenced by the fact that, in terms of national progress, Madinah is the only city that has implemented the intermediary concept under their local e-government initiatives. The intermediary is called 'e-Office',

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which is a physical space that acts as a mediator for citizens who require access to e-government services. The physical premises of the intermediary (also referred to as the third party) consist of interactive terminals and administrators (officers) to assist citizens with their online services with different government agencies. As Madinah City initiatives adopted an intermediary in 2003, the authors of this paper believe that the findings of this research will support local governments and other countries that have similar e-government situations to develop strategic plans in order to assist the diffusion and adoption of e-government services.

In order to realise the aim of this study, this paper is structured as follows: the next section illustrates the background of e-government in Saudi Arabia (initiatives, benefits, and challenges), and the roles of intermediaries in the Saudi e-government initiative. Factors influencing implementation of e-government, roles of intermediaries on electronic environment, and factors that encouraged citizens to adopt new e-government are presented in section three. In the fourth section, the authors present the research methodology adopted for the study. In section five, the research findings are presented. Finally, the paper concludes by summarising the key findings and outlining some recommendations for further research in section six.

2. E-GOVERNMENT IN SAUDI ARABIA

The Kingdom of Saudi Arabia (KSA) is a rich developing country in the Middle Eastern region that started implementing national e-government projects in 1998 (Sahraoui *et al.,* 2006; Abanumy *et al.,* 2005). According to the United Nations report, in the context of e-government readiness, KSA significantly transformed its electronic service delivery between 2005 and 2008 (UN, 2008). The KSA e-government efforts are largely focused on big cities like Riyadh, Mecca and Madinah. However, an in-depth analysis of these cities illustrates that they have merely managed to implement basic e-government services, with emerging research studies accentuating various barriers to successful implementation and progress which are linked to the government (or service providers) and the citizens (user aspects) (Al-Fakhri *et al.*, 2008; Abanumy *et al.,* 2005). According to a recent report by Internet World usage and population statistics (IWS, 2008) the total population in Saudi Arabia is around 28 million people and about 6,380,000 Saudi citizens have Internet access. Despite a dramatic increase in the number of Internet users, from around 200,000 in 2000 up to 6,380,000, a growth of about 3,090.0 % (ibid); there are still delays in utilizing and adopting e-government services. The rationale for undertaking this study is to further explore the reasons for this slow progress and the related challenges as they influence successful e-government implementation in Saudi Arabia from a government perspective. In addition, this study examines the role of intermediaries in helping to facilitate the implementation and diffusion of e-government in KSA.

The benefits of e-government to developing countries such as KSA are immense, particularly given the size and extent of the population. Saudi Arabia occupies an area of 2,240,000 square kilometres (about 865,000 square miles) in the Southern-Eastern region of Asia (MEP, 2008). Thus, distance often hinders citizens from travelling to government departments to access required services; travelling to a capital city from another region to access the services offered by a central government department is time consuming and costly (Al-Shafi and Weerakkody, 2007; Huang and Bwoma, 2003). Conversely, e-government facilitates a reduction in the physical contact between citizens and government employees demanded by traditional services. Finally, the use of the Internet will reduce the costs incurred by traditional government in providing services (Huang and Bwoma, 2003; Reffat, 2003).

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A number of initiatives have been achieved by the Saudi government to assist the adoption and diffusion of ICTs in general and e-government in particular. The Prime Minster and King of KSA ordered an investment of 3 billion Saudi Arabian Riyal's (SAR) in 2003 in order to support e-government readiness and 3 billion SAR in late 2006. The programme of e-government implementation is managed by 'Yasser', which is one collaborator company in KSA; this project is one of numerous initiatives that are dedicated to develop and enhance e-services for Saudi citizens. Nationally in the KSA context, Yasser Company lists four reasons why e-government services have become so dominant. These are as follows: "(1) Raising the productivity and efficiency of the public sector. (2) Providing better and more easy-to-use services for individual and business customers. (3) Increasing return on investment (ROI). (4) Providing the required information in a timely and highly accurate fashion" (www.yesser.gov.sa). Generally e-government initiatives in KSA are seen to be the move into cooperation with private sectors to manage and support the e-readiness of e-government services and to enhance Saudi society in order to be able to use the internet and e-government services at national and local levels (AlSobhi *et al.,* 2009). In 2003 another project was established locally in Madinah City; the e-government programme in Madinah is a partnership between KSA government and the private sector. Based on this partnership, electronic services are developed, managed and expanded. The Madinah initiative is a set of different projects operating in the Madinah region in order to develop a comprehensive e-government system. Those projects are: government procurement, training, design, e-learning, e-commerce, digital economy and Khdamatec (which is the Arabic term used for services; in the e-government context services offered by e-offices or intermediaries). However, all of these projects are still under development and only the Khdamatec (e-Office) project has been established (ibid). The concept of e-government in Madinah is designed to cover 60 government bodies working in the region (AlSobhi *et al.,* 2009).

The overall vision of Khdamatec (or Madinah Intermediary e-offices) involves the management and operations of electronic service delivery and related systems, and support training of management staff in different government agencies in the use and delivery of e-services. Khdamatec agencies are seen as an initial model of one of many multi-channel strategies that are identified in Madinah City for e-government service delivery. The main reason for developing this method is to establish a new and convenient way of delivering services to citizens and to assist those citizens who are less computer-savvy in adopting e-government systems. According to AlSobhi *et al.* (2009), the motivation for establishing the e-offices was mainly influenced by the following: (1) the difficulty of verifying the identity of stakeholders (e-Identification). (2) The challenges that Madinah citizens faced using technology and accessing the Internet (digital divide). And (3) the difficulty of finding reliable methods those citizens can follow in order to pay for services that request a payment (e-Payment). Given such a background, the roles of an intermediary come as a result of a lack of technology readiness and social potential for new e-government. Therefore, the next section will briefly review the literature of e-government implementation to further understand the factors that can influence e-government success.

3. LITERATURE REVIEW

One of the most significant current discussions in e-government success is the adoption and diffusion of e-government services from and into societies (Moon, 2002; Warkentin *et al.*, 2002; Carter and Belanger, 2005). The adoption and diffusion issues strongly rely on the implementation of a good infrastructure that facilitates e-services flow between e-government stakeholders, government, citizens, and business (Moon and Norris, 2005; Ebrahim and Irani, 2005; Medjahed *et al.*, 2003). Simply, using new technologies is aiming to deliver e-services for all e-government stakeholders alike. A well-known study of e-government implementation failure and success rates in developing

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countries was carried out by Heeks (2003). His study shows that 35 per cent of e-government projects in developing countries are total failures (projects never implemented), 50 per cent partial failures (major goals for the e-government project were not attained, and/or there were a large unwanted results) and 15 per cent successes (all of e-government stakeholders have reached their major goals, with a good experience). Heeks (2003) draws attention to distinctive categories of e-government implementation in developing countries which are often observed as a gap between design of e-government projects and current reality of actual users. As the literature suggests, the term implementation refers collectively to the infrastructure, employee skills, change management, funding, leadership, and similar public hard and soft factors which are required to establish e-government services that are accessible and usable by all stakeholders alike (Chatfield and Alhujran, 2009; Ebrahim and Irani, 2005; Kuk, 2002; Gouscos *et al*., 2002). Given this context, the authors argue that the success of e-government implementation will be influenced by three dimensions: (1) factors influencing implementation; (2) factors influencing adoption and usage by citizens (3) role of intermediary in bridging any gap between implementation and adoption.

 3.1 Factors Influencing E-Government Implementation

3.1.1 Infrastructure and business process:

Many researchers have discussed the influence that technical infrastructure (Moon and Norris 2005; Riley, 2003; Davison and Martinsons, 2003) and business process related issues (Irani *et al*., 2007; Ebrahim and Irani, 2005) have on successful e-government implementation. Ebrahim and Irani (2005) for instance have categorised a framework for e-government architecture into four layers: access layer, e-government layer, e-business layer and infrastructure layer. They provide an example of multi-channel services delivery to increase the accessibility of e-government web portals like mobile phone, digital TV, PCs, and Kiosks…etc. The factors influencing the adoption and diffusion of e-government are closely tied to the availability of governments' capacity resources (Moon and Norris, 2005). Moon and Norris (2005) suggest that personnel, knowledge, financial resources and technical assets (hardware and software) of the government are the major resources of e-government implementations. Irani *et al.* (2007) claim that, despite the fact that the technical resources and different ICTs are changing the ways of delivering e-government services, greater emphasis and focus is required on cultural change, degree of commitment, business processes and organisational structure to gain a better position in terms of e-government implementations.

3.1.2 Leadership, funding and coordination

It has conclusively been shown that technical and organisational aspects require economic resources; for example, sustainable funding and non-economic resources such as strategic, leadership and project management skills are seen as important aspects for facilitating and promoting the implementation of a successful e-government infrastructure (Chatfield and Alhujran, 2009). Leadership is a key success factor of e-government implementation, as the observers of e-government projects have seen, e-government as a long term challenges and best practice aims to meet the needs of different segment of society, thus leadership support is needed in order to minimize different challenges that may emerge when implemented e-government. Similarly, Ciborra and Navarra (2005) discuss challenges for further progress of e-government; their study shows that there is no standard methodology that can be used to calculate the approximate cost for e-government projects and the benefits gained from e-government. Lack of a good estimation of the accomplishment of the e-government initiatives can result in retardation of overall e-government implementation (Koga, 2003). Further, Koga (2003) argues that it is not obvious how top management can estimate such enormous initiatives. At the same time, while e-government success needs a strong leadership support and standardisation in the

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management of public accounts, success of e-government projects need to also have good coordination between various actors involves in the e-government projects (Ciborra and Navarra, 2005; Koga, 2003).

3.1.3 Accessibility, availability and usability

Within e-government implementation, usability, availability and accessibility of e-government services for stakeholders through internet and e-government websites are considered as significant barriers that impede the implementation of e-government (Kuk, 2002). To distinguish between these three terms, the reader should be aware of the different meanings of these terminologies. Usability can be defined as the kind of procedures and processes that have been implemented in other platforms and applications and that are widely used by a group of users (Wang *et al.,* 2005; Lee, 1999). By way of illustration, Kuk (2002) shows how the usability and navigability of a website is a key factor that determines e-government implementation readiness. His study shows that usability is engaged not only with the take-up of electronic service delivery but also to make the government website more easy to use and read, which in turn affects the service quality. As shown by the literature, improved government services could be achieved by improving the quality, range, and maximal accessibility of services (Gouscos *et al*., 2002).

Basically, the term accessibility refers to the way in which users obtain different government services in an easy way and have access to various information from different channels, data communications devices, and platforms via distant locations (Beynon-Davies, 2007; Ebrahim and Irani, 2005; Moon, 2002). Accessibility is one of the major factors that can enhance interactions either online or offline (Deakins and Dillon, 2002). Accessibility differs from the term usability in a number of important ways; accessibility focuses more towards the direction to interact with each system whereas usability describes the procedure of using the system or the services. It has been argued that accessibility and usability are the terms used for improving the effectiveness and efficiency of systems and implemented technologies (Shackel, 2009). While the aforementioned discussion suggest that although both accessibility and usability can be a rating standard of e-government implementation success, availability of e-government services is also important.

Availability is the number of services that are available for the users; it gives an indication of the range of the available services around the clock, 24 hours a day 7 days a week (Layne and Lee, 2001). Criado et al., (2003) illustrates that a combination of different factors, including accessibility, usability and availability, can enhance any implementation of e-government initiatives. Generally, retardation of e-government implementation is most likely caused by a lack of standardisation of e-government websites and a shortage of IT developer experiences. According to Criado et al., (2003), e-government initiatives have been obstructed by a lack of standard technology use and skills needed to implement various technologies of e-government. Thus, e-government services should be accessible by stakeholders from distant locations and available around the clock, within secure gateways.

3.1.4 Security and Privacy:

It has been demonstrated that implementation of e-government results in the need for an increase in privacy and security by implementing good authentication systems and firewall devices. Although privacy and security help to improve e-government implementation, Heeks (2003) and Dada, (2006) have reviewed a few bad practices of e-government implementation which impede the adoption and diffusion of e-government in developing countries. While privacy and security have been highlighted as a subset of the technical pressure for e-government implementations (Elliman *et al.,* 2007) and

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may negatively impact on the acceptance of e-services from the citizens' side (West, 2004), they have also been shown as reverse effects in the resistance to change from the employees' perspective (Ezz *et al.,* 2009). On the other hand, resistance to change of employees can be overcome by a high level of training (Dent and Goldberg , 1999).

3.1.5 Training users

Training employees is widely associated with improving overall development of e-government to achieve higher success of e-government programmes, through keeping the stakeholders' information (citizens and businesses) away from employees' personal uses (Ezz *et al.,* 2009). Moreover, training is associated with encouraging citizens to accept and use e-government by helping them to use computer and Internet applications (Hung *et al.,* 2006). On the one hand, e-government implementation is a set of technological, organizational, economical and social aspects; this implies that a lack of these attributes of e-government implementation hinders the diffusion of e-government services into societies from the government side. Conversely, these attributes also affect the adoption rate from the citizens' side. While the above-mentioned literature suggests that although implementation of e-government affects both government and citizens, the citizens' adoption rate is more likely influenced by other soft factors rather than the hard factors mentioned above. The next section briefly discuses the relevant literature of soft factors that influence citizens' adoption rate in top developed countries and then in developing ones.

3.2 Factors Influencing Adoption and Usage

2.2.1 Trust and privacy

The implementation of secure technologies can be seen as one of the key factors that influence citizens' perception of privacy trust to adopt e-services. A study in the US by Carter and Belanger (2005) identified three major factors that explained the rate of e-government adoption: complexity of services; trust of internet and trust of government; and perceived ease of use. Further, a study in the UK by Carter and Weerakkody (2008) indentified two central factors influencing citizens' adoption of new e-government services – relative advantage and trust in the internet. These studies show that having to disclose personal data may influence users' trust in the new channels of e-services and thus may result in obstructing further success of e-government implementation.

2.2.2 Access and skills (Digital divide)

As e-government delivers public services, it is essential that e-government services are able to reach all populations alike, including those citizens with no internet access and those who have less ability to cope with new technology. The need for governments to expand e-government services for all their citizens is further compounded by the increasing numbers of population that have no 'e-literacy' as result of digital divide. Belanger and Carter (2006) suggest that e-government is hindered by digital divide; digital divide often represents the gap between the economically well-to-do and less well-to-do in a country as well as the gap between developed and developing nations (Lam and Lee, 2005). According to Belanger and Carter (2006), digital divide is classified as the ability to access the Internet and the skills needed by citizens to use technologies. Further, barriers to accessing the Internet were classified as age, level of education, and income. The skills needed by citizens are classified into two types: skills needed by citizens in order to obtain e-government services and information literacy (Belanger and Carter, 2006; Jaeger, 2003). Although an increasing number of

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citizens are utilizing e-government services, digital divide can be considered as one significant barrier that impedes many citizens from adopting e-government services (Belanger and Carter, 2006).

In the context of developing countries and in the realm of adoption and usage of e-government at the individuals' level, a recent study by AlAwadhi and Morris (2008) aimed to investigate factors that influence Kuwaiti citizens to adopt and use e-government services. Their result suggests that facilitating conditions are one important factor that determines citizens' usage of e-government services (AlAwadhi and Morris, 2008). A number of studies have revealed that the infrastructure development in KSA is lacking (Al-Sobhi *et al.,* 2009; Al-Fakhri *et al.,* 2008).

A good infrastructure system of e-government implementation not only affects the diffusion of e-government services into society, but also affects the acceptance and adoption of e-government services. Thus, the lack and shortage of soft and hard factors poses the need for a third party out there in the environment to act as an intermediary, to reduce the gap caused by technologies and social aspects and to facilitate further development of e-government (AlSobhi *et al.,* 2009). This argument is supported by a number of researchers from e-business contexts (Howells, 2008; Sarker *et al.*, 1998; Bailey and Bakos, 1997). In this respect, intermediaries are expected to have a positive impact on e-services dissemination and on the attitude toward e-services adoption at an individual level (Howells, 2008; Sarker *et al.,* 1996). In particular, intermediaries have the potential to make e-government more successful since the underlying aim of e-government is to attract more citizens to take benefits from e-services that provides by an e-government (AlSobhi *et al.,* 2009). However, the literature of their added value in terms of adoption and diffusion of services is still lacking within an e-government context. Therefore, the roles of the intermediary have been discussed in the following section.

3.3 Role of intermediaries in facilitating e-government adoption and diffusion

It is necessary here to clarify exactly what is meant by an intermediary. An intermediary is an organisation where services are transferred and passed onto others (Janssen and Kilevink, 2009). In the literature, the term tends to be used to refer to third party structures that operate in an electronic environment and helps in the dissemination of information into societies, facilitating the exchanges within electronic services (Janssen and Kilevink, 2009; Howells, 2008; Sarker *et al.*, 1998). An intermediary is commonly used to help in services transformation and yet is a concept that is difficult to define specifically. However, this study adopted the definition offered by Janssen and Kilevink (2009), who defined an intermediary as *"any public or private organisation facilitating the coordination between public services providers and their users"* (Janssen and Kilevink, 2009, p.38). In this research case study, users are citizens and businesses.

With the emergence of Internet applications and the growth of e-businesses during the 1990s, there was increasing concern that the roles of intermediaries were being eliminated (or disintermediation; Gellman, 1996; Malone *et al.,* 1987). For instance, one study in disintermediation was undertaken by Gellman (1996). His study showed that a number of invisible changes will happen after technologies (e.g. establishing websites via WWW) are diffused through societies; this will encourage the roles of traditional intermediaries to be bypassed. However, there is a lack of empirical evidence to support this argument. Other studies that contradict this view suggest that while the Internet and associated ICTs may reduce the roles of traditional intermediaries, they may also result in increasing their roles in some cases where factors such as trust may influence their position (Sarkar *et al.,* 1998; Bailey and Bakos, 1997). Bailey and Bakos's argument relies too heavily on the qualitative analysis of 13 case studies; their findings showed that the number of roles for traditional intermediaries emerged in the context of electronic markets which cannot be easily eliminated by direct interactions via the internet.

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Four roles indentified by Bailey and Bakos's study are as follows: aggregating, matching supplier and customer, providing trust, and providing inter-organisational market information (Bailey and Bakos, 1997). First, intermediaries may enhance trust by reducing the risk of transactions failure, by ensuring transactions between parties have been completed, and by keeping all parties up to date (service providers and requesters) with the transaction processes (Bailey and Bakos, 1997). Also a traditional intermediary may provide legal contact between parties, providing the authentication and security communication needed in such a relationship (ibid). Another role suggested by Bailey and Bakos's study is that intermediaries facilitate the transfer of information between parties in the case of the lack of a reliable infrastructure and standard electronic service, thus promoting a desire for value added by the facilitator (third party). In this insight Datta and Chatterjee (2008) argues that, intermediaries in electronic market are emerging because of inefficiencies of electronic mechanisms to provide services; they posit that this will influence consumers behaviour to trust in a third party which is working as a link between service provider and requester. The third role given in Bailey and Bakos's study is about matching a customers' need of services to what the supplier offers. Finally, the intermediary is aggregating requests of many customers to the products from different suppliers (Bailey and Bakos, 1997).

Similarly, Ehrlich and Cash (1999) stated that the role of an intermediary is often invisible; for example, users support and help to use new systems (such as new technologies against users' experience) could be one of the hidden roles that may be provided by intermediaries, this role arises between the users' beliefs and their ability towards utilizing the systems. Howells (2008) suggests a significantly different role of intermediaries which work well on many different issues such as information diffusion and their influence on adoption rates within society. According to this research, third parties such as intermediaries can play a major role in the adoption and diffusion process by helping to standardise the technologies that are used to deliver e-services (Howells,2008). This is particularly significant in the e-government context as the ICT applications used in government can be fragmented and diverse. Moreover, when taken in the context of public services, intermediaries can help to increase the points of availability of services for citizens particularly in areas where there is a digital divide (Griffin and Halpin, 2004).In this context, using an intermediary can support the training and education needs of citizens by facilitating the assisted use of technology; this enables the gradual transition of citizens to 'self-using' new technology (Griffin and Halpin, 2004). In addition, this business model can be technology-driven and scalable, as per public adoption rates from the citizens' perspective. Other benefits highlighted in the literature include, the potential of electronic intermediaries to reduce the perceived risks of e-services and produce a trusting environment (Sarker *et al.,* 1996). Therefore, there is an increased convenience for both citizens and businesses in using the intermediaries as a multi-service vending facility (Bailey and Bakos, 1997).

Research has shown that the intermediary role has emerged as a reaction to a different set of specific circumstances which are associated with environmental and social conditions (Ehrlich and Cash, 1999). In some developing countries, the global vision for public service delivery is to transform the services of government agencies and to offer them through different channels such as intermediary offices. In fact, the concept of intermediaries is not a new idea in real-life activities. For example, a post office can be considered as an intermediary point in helping citizens and businesses to indirectly access public services from anywhere in a country. In the United Kingdom and the United States, the post office is considered an independent agency that is responsible for mail delivery and a communication gateway between businesses and individuals.

4. RESEARCH METHODOLOGY AND APPROACH

To empirically explore and validate the arguments set out above in a deep and meaningful manner, a qualitative case study approach was considered suitable for this study (Walsham, 1993). A case study examines a phenomenon in its natural setting, employing multiple methods of data collection to gather information from one or a few entities, e.g. people, groups, or organisations (Yin, 1994). Cavaye (1996) also argues that case studies enable the researchers to investigate a phenomenon in depth, getting close to the phenomenon, providing rich primary data and revealing its deep structure within the organisational context. In this research, semi-structured interviews constituted the main data source in the case study. The main advantage of semi-structured interviews is the flexibility they offer in understanding events by getting more detailed information (Yin, 2003). One set of interviews was conducted between August and November 2008, by visiting the interviewees in a large government department at Madinah City. Other interviews responsible for collecting data from the intermediary (e-offices) organisation were carried out between July and October 2009, by visiting three e-offices in Madinah City in different areas. Two board directors of a large government department of Madinah City were interviewed using semi-structured interviews (Bryman and Bell, 2003), which lasted around an hour and a half and offered the opportunity to obtain an overview of e-government implementation in Madinah City, as well as of the specific challenges facing the government. The interviews were arranged through a number of personal visits to government departments and numerous telephone calls to interviewees. The purpose of the interviews with the government officials were to understand the main challenges faces by the Saudi government in terms of e-government implementation and diffusion.

The interview protocol used was as follows. The interviewees decided a convenient time and location for the interviews and were given enough time to arrange this. When the interviews commenced, the interviewees were notified that they could stop and withdraw from the interview at any time if they desired. The interviews were tape recorded with permission from the interviewees; it was essential to use a tape-recorder in order to have enough time to analyse the data. The interviews were transcribed immediately after completion.

Since the primary focus of this research is to explore the role of intermediaries in an e-government context, another semi-structured interview was conducted with one of the Board Directors (BD) of the Steering Committee of the e-government project in Madinah City. This interview was complemented and supported with other interviews, by visiting three e-offices in different areas of Madinah City. Since the only sources of published information on e-government in Madinah are official government reports and publications, the use of multiple methods or triangulation was useful for gathering more details about e-government diffusion and related challenges in Madinah City, and to get an in-depth perspective of the wider aspects of the research context (Denzin, 1989). Moreover, the triangulation approach helped the authors to compare the written and spoken versions, and increased the reliability of findings by confirming evidence from multiple sources. In the context of this paper, documentation was used which consisted of official information reports published by the 'imaratalmadinah organisation' within the Saudi Arabia government realm. Although these publications do not provide an overall illustration of the current state of affairs, to a certain extent they highlight the major benefits and current challenges facing e-government implementation in Madinah City.

5. RESEARCH FINDINGS

The empirical research conducted in this study with officials who are responsible for the overall e-government implementation and those responsible for running the intermediaries (e-offices) revealed

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that although overall e-government implementation and adoption was slow in Saudi Arabia, intermediaries were helping to improve e-government adoption and diffusion. However, interviews with the e-offices manager and other staff in Madinah City e-offices identified a number of challenges currently facing the e-offices and e-government implementation. These challenges are discussed below.

5.1 Implementation challenges

The interviewee at the Madinah government department mentioned that some government departments in Madinah City did not implement e-government services in order to provide e-services to their citizens. Consequently, only selected services were available online; this has resulted in a lack of consistency in promoting the idea of e-government in Madinah city. While the computerisation (automation) of traditional services has a positive impact on e-government success, the security of information flow is highly important in a Saudi context where citizens are less exposed to online services when compared to developed countries. According to the interviewee, there are still concerns about the security issues in implementing e-government technologies within e-enabled government in Madinah City. The interviewee (Board Director) stated that:

> "... the e-Service concept did not succeed in GCC countries. The reasons behind this failure are that: (a) User confidence and information security is still very weak through the use of the Internet, and (b) There is resistance to change from government employees and citizens are required to visit the government departments in order to obtain their services ..."

However, in terms of promoting privacy among citizens to encourage them to use e-services, Madinah City has imposed high financial penalties for anyone misusing personal information that is exchanged through the e-government portal and e-offices. These strict regulations aim to maintain the use of the e-government portal, increase its credibility in the eyes of the citizens, and guarantee the information submitted for government departments is correct. This has undoubtedly led to adoption and diffusion of the e-office concept and e-government in the wider context, although at a lethargic pace. In addition, within the challenges mentioned above, employees were found to be one of the important challenges in terms of providing e-government services for the public. It is quite clear in this research study that the Madinah government has difficulty with implementing and establishing technologies and with minimizing employees' scepticism of using e-government systems tools to provide services.

Furthermore, another key challenge highlighted by BD was the integration of different government departments in line with the e-government infrastructure in Madinah City, as one interviewee stated that:

> "...To ensure effectiveness of e-government services and increase the acceptance by the Madinah citizens, the Madinah City departments must move towards integration of various technologies across the government agencies. In the Madinah e-government context, one of the most important challenges concerning the current e-government model is the integration between different government agencies and the lack of information exchange between them..."

One interviewee revealed that the services provided through the e-offices or the e-government project overall are not fully implemented yet. It was obvious that this was also having a negative influence on the adoption and diffusion of various e-services into Madinah society. Thus, implementing an efficient e-government infrastructure is not an easy task and needs time, and funding such projects is very important as the BD outlined:

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> *"We do not have sufficient grants to fund e-government projects at Madinah City to construct government services online in order to deliver e-government services for citizens"*

As a consequence of this statement, it appears that funding of e-government is a very important factor in the further development of e-government implementation. Another interviewee mentioned that technologies themselves have not been a problem in recent times but that dealing with public acceptance of e-services is the most important issue, saying:

> *"ensuring that the services offered cater for the elderly citizens of Madinah City is another major challenge identified in the e-government"*

5.2   Role of Intermediaries (e-offices) in facilitating e-government services

The focus of e-offices centres in Madinah City was mainly on connecting Madinah government departments with their citizens. To complement the interviews with the government officials, interviews were conducted with managers of three e-offices in Madinah city.   An e-office manager stated that "*the main reason to introduce intermediary e-offices in Madinah e-government strategy is to provide a link between government and citizens*". Therefore, the major focus of the e-offices is the way in which citizens interact with e-government. While mentioning various roles of e-offices, training the citizens to use new technologies and services in relation to e-government initiatives with the help and support of e-offices was essential.

The e-offices were trained to provide help and support for Madinah citizens. As an e-offices centre manager said, "*(it) is a very important role of our centre to support training and learning needs for using internet applications and computers. Our services are mainly limited to giving support for accessing e-government services on behalf of citizens; this is because of our limited resources and capabilities*". As shown by interviewees, training people in the self-usage of e-government services is a very important role in the Madinah e-government strategy. The training and support of new e-government services is crucial, as all interviews with e-offices managers clearly indicated a positive attitude from e-office centres to promote the training of Madinah citizens in relation to the e-services gateway.

In this study, intermediary e-offices were found to assist citizens to adopt e-government services. Madinah citizens were generally having difficulty to use and access the internet to obtain e-government services. As one of the e-offices managers said, "*although we are here to help citizens to access e-government services, the visitors to our offices are usually having difficulty to use technology like the internet and some visitors do not have the internet at all*". While a few interviewees agreed about promoting citizens' adoption rate toward e-government services, an essential role of e-offices is to help citizens to access e-government services. Another manager argued that citizens need e-offices not because of the access issues but because of trust, information privacy and security issues. This manager stated, "*visitors come to access the internet even though some citizens have a computer at home and have an internet connection; however, they visit us because they currently have a very low level of trust in e-services.*"

The above comments suggest that a low trust in technology within the Madinah community has a negative impact on the take-up of e-government services. As shown by the literature, privacy and security inhibit citizens' adoption rate of e-government services. The e-offices manager pointed out that, "*we have record files for all our customers, so citizens can either come to our office to ask for new services or they can ask for services by phone and we can perform the services on their behalf*". Interviewees were asked what the additional roles of their third party e-offices centre were, and one interviewee highlighted that the role of e-offices is to build trust between government and citizens in

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relation to the e-services provided electronically. Thus, the role of the third party was to enhance the relationship between government and their citizens. From the government's perspective their role was to authenticate citizens in some e-services that required citizens to be authenticated by e-offices centres. On top of that, e-offices' role was to control the transactions flow between government and citizens, in both directions.

Another interviewee commented: *"We have electronic authorisation in the e-government portal, so for each service required from citizens that needs our help and support, they can authorise us electronically. Therefore we can take responsibility for all transactions without citizens needing to come to our place in order to start the work"*. In this respect of providing personal information or any financial transactions, intermediary e-offices centres have an important role; as one interviewee pointed out, *"a number of citizens are confident to share personal information with us; we can also make payment on behalf of citizens from our bank account and they can pay us back by cash"*. Another interviewee added that it is very important to realise that a number of their customers, as well as not having internet access, do not have a bank account to pay for e-government services. Besides the findings mentioned above, e-offices managers stated that awareness of e-government services in the Madinah community is very low and people are not always happy with new technology gateways, especially old people with poor education. One manager suggested that if the citizens know about the benefits of e-government this is likely to promote the adoption rate of e-government services from the citizens' side. Another stated that awareness has to be raised either through e-offices centres or by using TV, newspapers, radio, etc, in order to gain the potential benefits of e-government services for society. The aforementioned challenges and the role of intermediaries in facilitating e-government adoption and diffusion in this context is summarised in Figure 1.
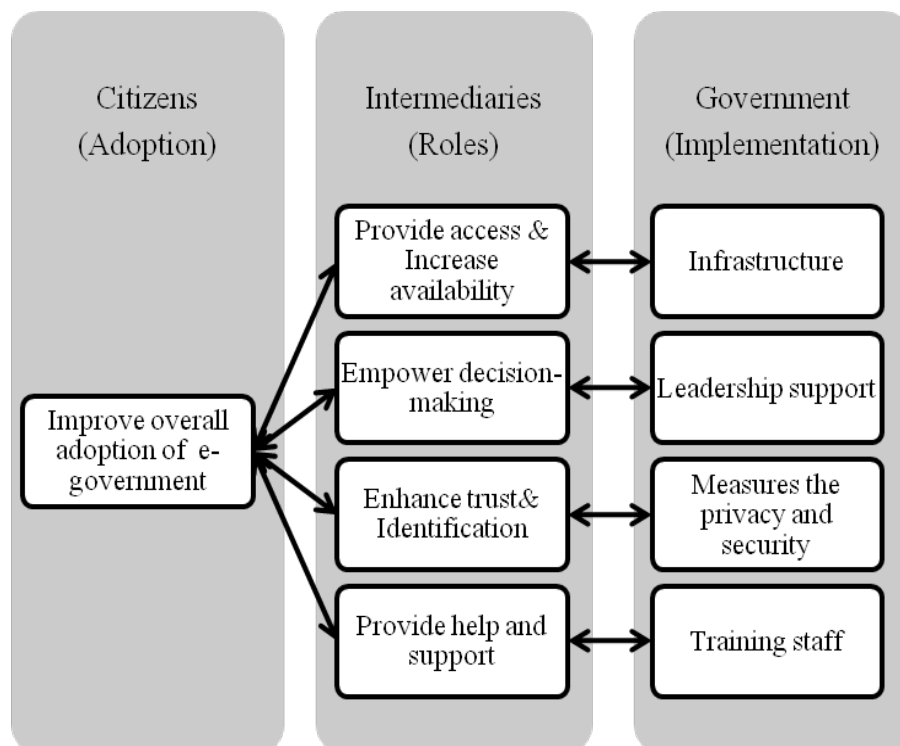

Figure 1. The role of intermediaries in e-government implementation in KSA

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6. DISCUSSION AND CONCLUSION

Intermediaries have been introduced as part of e-government strategy in KSA to bridge digital divide, and facilitate citizens' access to e-government services. In addition, intermediaries (e-offices) help bridge the gap that KSA face in terms of the information technology and infrastructure readiness for e-government diffusion. However, as this research has discovered the establishment of intermediaries in KSA has not proven as successful as expected. This research set out to highlight the factors that impact the successful implementation of e-government in the KSA context, the factors that affect citizens' adoption of e-government services and the roles of intermediaries as a solution to the challenges that accrue from e-government implementation. Besides reviewing the literature, a qualitative case study (interviews) with the KSA government department and managers of e-offices (the intermediary) was used to explore the above themes. This research found that, security issues have impeded e-government implementation not only from the government perspective but also from the citizens' side. The second major finding was that at present the infrastructure is not integrated; as not all government departments in Madinah City participate in the e-government portal and not all government services are available online. In this context, the Madinah e-government initiative intends to transform e-government services by increasing access to e-services through intermediary organisations or e-offices.

This research also aimed to identify the roles of intermediaries in an e-government context; the following conclusions can be drawn from the interview sessions with intermediary managers. Training citizens in the self-usage of e-government services is an important role of e-offices; however, interviews with e-office managers indicates that their intermediaries only provide support on behalf of citizens who apply for new services (i.e. workers completing the tasks on behalf of the citizens) and no individual training is offered to citizens in self-using the e-services. Furthermore, the results of this investigation show that visitors to e-offices are mainly influenced by a low level of trust in technology, in addition to the fact that most of the visitors do not have internet access.

The framework that this research has identified therefore assists in our understanding of the role of intermediaries in the e-government context. Therefore, this research will serve as a basis for future studies, and much needs to be done to further explore these finding. Finally, a number of important limitations in this study need to be considered. First, the finding may not be applicable to other countries that have different circumstances in terms of the level of citizens' ability to use new technologies as well as their e-government readiness. Second, this research did not examine factors that influence citizens' adoption; thus, future studies would be significant to investigate factors that determine the adoption of e-government services by citizens through e-offices.

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