An exploratory study on the role of intermediaries in delivering public services in Madinah City
Case of Saudi Arabia

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Abstract

Purpose – The purpose of this paper is to investigate the role of the intermediary in delivering public services from government departments to different stakeholders (business and citizens) and to highlight the challenges that face the development of e-government services in the context of Madinah City, in Saudi Arabia.

Design/methodology/approach – The paper uses a broad literature review to identify significant factors that contribute to e-government adoption and diffusion success. These factors are then used as a basis for analyzing the findings from a case study that focuses on the concept of intermediaries for e-government service delivery in Saudi Arabia. To investigate a less-recognized phenomenon, such as the use of intermediaries in e-government contexts, the authors adopt a qualitative case study approach to gain further understating. This method allowed examining the phenomenon in its natural settings through employing multiple methods of data collection. Further, it gave the researchers enough room to get a closer look at the reasons behind introducing the intermediary concept in the e-government context and provided considerable flexibility during interviews and observations.

Findings – The results of this paper indicate that digital divide and poor infrastructure to conduct payments (secure transactions) for e-government services was hindering citizens' adoption of e-services in Saudi Arabia. Thus, the intermediary concept was facilitating citizens' access to e-government services and helping to reduce the digital divide in Saudi Arabia. The findings also show that intermediaries helped in increasing the availability of e-government services. Additionally, this paper finds that trust between the service provider (government) and service requester (citizens and businesses) is an important factor that influences not only e-government adoption and diffusion, but also the role of electronic intermediary (e-offices) in facilitating this adoption.

Originality/value – The authors take into account the most salient adoption factors when introducing e-government systems. Electronic intermediaries may help to enhance the understating and analysis of those adoption factors in government settings and facilitate government departments in realizing the importance of intermediaries' role in e-government contexts. Furthermore, this paper significantly contributes to the knowledge and practice of e-government adoption and diffusion and provides sufficient support to decision makers in expediting e-government adoption and diffusion.

Keywords Government, Trust, Intermediaries, Saudi Arabia, Public sector organizations, Communication technologies

Paper type Case study

1. Introduction
Over the years, information communication technology (ICT) has been considered to be significant in modernising and transforming most organisational functions and

operational practices (Beynon-Davies, 2005). Literature indicates that ICT has acted as an intermediary in facilitating effective interaction between a wide range of stakeholders (Grimsley *et al.*, 2007; Zhang *et al.*, 2005). In terms of providing electronic service delivery, ICT has played a significant role in the private and public sector (Beynon-Davies and Williams, 2003). However, much of the research that has been published pays close attention only to issues of functionality (Millard, 2007; Layne and Lee, 2001) and the technical aspects (Chen, 2002; Safai-Amin, 2000) of ICT in an electronic service delivery context. Comparatively, little attention has been paid to issues pertaining to usability, accessibility, and the availability of public electronic services from a citizen's perspective (Carter and Belanger, 2005; Becker and Nowak, 2003). Emergence of the need for electronic service delivery in the public sector has been influenced by the need to serve citizens using better, more efficient and transparent means of interacting with government using web-based systems (Fang, 2002; Brannen, 2001). When the internet emerged in the mid-1990s (Lee *et al.*, 2005), it was merely utilised for information provision, sharing, and educational purposes; nevertheless, today it has become part of day-to-day and operational activities for many people (Lofstedt, 2005; Villaplana, 2003). From a commercial perspective, the internet has become an important business medium for organisations attempting to expand their market portfolio through web presence (Richards and Jones, 2006). On the other hand, Pan *et al.* (2006) assert that non-profit organisations such as governments can increase the availability of their information, and improve their security, services, and local citizens' satisfaction of their services through internet.

Most governments in developed and developing countries have established web portals to offer electronic service delivery to their citizens (Chen *et al.*, 2006; Lee *et al.*, 2005). Among others, Saudi Arabia is one such developing country that has cultivated its web presence since the late 1990s (Kostopoulos, 2003; Al-Tawil, 2001). Literature indicates that with the help of these web portals, government organisations increase their productivity (Norris and Moon, 2005), gain a competitive advantage (Deakins and Dillon, 2002; Whitson and Davis, 2001) and reduce the gap between the different government agencies and local authorities (Eyob, 2004; Silcock, 2001). However, there are differences in the adoption and implementation of e-government within several government organisations at a national and international level (Heeks, 2002; Moon, 2002). These differences can be attributed to the individual organisational requirements, circumstances, readiness (Lam, 2005), and structure, size and cultures (Kamal *et al.*, 2008; van Dam *et al.*, 2005). Although developing countries in the Gulf Cooperation Council (GCC) region have invested heavily in e-government implementation (Al-Shafi and Weerakkody, 2008; Al-Shafi, 2007), several researchers argue that these implementations have resulted in varying results and delayed outcomes (Al-Shafi and Weerakkody, 2007; Kurunananda and Weerakkody, 2006).

Saudi Arabia is a rich developing country in the Middle Eastern region that has started implementing national e-government projects since 1998 (Sahraoui *et al.*, 2006; Abanumy *et al.*, 2005). According to the UN report, in the context of e-government readiness, Saudi Arabia has significantly transformed its electronic service delivery from 2005 to 2008 (UN, 2008). The Saudi Arabian e-government efforts are largely focused on big cities like Riyadh, Mecca, and Madinah. However, an in-depth analysis of these cities illustrate 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 citizen (user aspects)

(Al-Fakhri *et al.*, 2008; Al-Shehry *et al.*, 2006; 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 28,146,657 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 percent, (IWS, 2008), 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 its related challenges, as they influence successful e-government implementation in Saudi Arabia from a government perspective.

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 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 (e-office) concept under their local e-government initiatives. The e-government implementation efforts in Madinah are divided into five different stages (as outlined by the United Nations) that revolve around offering basic information to more complex transaction level services (UN, 2005). These stages are as follows:

- *Stage I.* Comprises of basic government services that are available online; static government information is offered to citizens through an official web site.
- *Stage II.* Government web sites provide public policies and government information.
- *Stage III.* Offers an interactive presence with online services that support consumer needs such as interacting using the telephone, e-mail, and fax.
- *Stage IV.* Is about two way interactions between the government and their citizens.
- *Stage V.* Integrates all the levels of government-to-government (G2G), government-to-citizen (G2C), government-to-employee (G2E), and citizen-to-business (C2B) services.

Having studied the aforesaid stages of e-government, e-government in Madinah currently:

[…] is mostly under development and presently providing stage II and III e-government services, although the project promises a gateway with both transactional and networked presence (stages IV and V) (Sahraoui *et al.*, 2006, p. 17).

The national e-government program in Saudi Arabia aims to facilitate access to government services for different stakeholders and raise the quality of the interaction of citizens, residents, and businesses by using new ICTs to improve the flow and exchange of information (Al-Shehry *et al.*, 2006; Sahraoui *et al.*, 2006). In order to explore the e-government efforts in Madinah City, the authors use a qualitative case study research approach, involving two sets of in-depth interviews with two Board Directors (BD) of a large government department and a senior member from the BD of the Steering Committee of the e-government in Madinah City. The interviews were complemented with observations in a large e-office, which is a physical premise that acts as an intermediary for citizens who require access to e-government services. The physical premise (referred to as the e-office) consists of interactive terminals and administrators

(officers) to assist citizens with their online services with different government agencies. The focus of this research is to investigate the role of e-offices (or intermediaries) in facilitating e-government services in Madinah City. This approach allowed the authors to get a good understanding of e-government service delivery practices in a real-life context and offered a perspective on the challenges facing the e-government progress in Madinah City and Saudi Arabia at large.

In order to realize the aim of this study, this paper is structured as follows: Section 2 illustrates the literature perspective on e-government. Thereafter, in Section 3, the authors present the research methodology adopted to conduct empirical research investigating the e-government practices in Madinah City. In Section 4, the authors present the case study conducted, with the empirical findings of the interviews carried out in Madinah City and, highlighting the key issues influencing e-government, as seen by a specialist in e-government implementation and adoption. Finally, we conclude with a discussion, presents limitations some recommendations for further research and implications for both practice and research in Section 5.

2. E-government: conceptual perspectives

Several researchers have offered different definitions of the e-government phenomena. However, these definitions differ depending on e-government interests and perspectives, as well as on the community's goals and values (Lowery, 2001). Literature indicates that the main focus has been given to relational perspectives, such as G2G, G2B, G2E, and G2C related to e-government service delivery. While these relational perspectives illustrate a number of definitions, there is no universal definition for e-government (Criado and Ramilo, 2003). For the purpose of this research, the definition adapted is offered by Carter and Belanger (2005). They propose that "e-government is the use of information technology to enable and improve the efficiency with which government services are provided to citizens, employees, businesses and agencies" (Carter and Belanger, 2005, p. 5). Based on this definition, the paper concentrates on the services provided to citizens using a qualitative study in an intermediary (e-office) that facilitates citizens' access to e-government services.

As the focus of this research is to comprehend citizens' interaction with government services, therefore, the authors focus on a G2C perspective. This conception of delivering e-government services to citizens provides opportunities for citizens to access the services from home, rather than traveling long distances for face-to-face interaction at government agencies (Carter and Belanger, 2005). In addition, it provides various other services, such as information provision, community services, tax payment, license applications, education, health care, libraries, and hospital information (Jaeger, 2003; Warkentin *et al.*, 2002). The literature shows that such activities with the citizens make up the primary goal of e-government (Al-Khouri and Bal, 2007; Jaeger, 2003). Typically, there is a relationship between government bodies or agencies and their citizens to provide services, such as sharing polls and voting online (Huang and Bwoma, 2003).

2.1 Benefits

Like several other phenomena such as e-business, e-commerce, and e-learning that provide multiple benefits, e-government also delivers a number of services to its stakeholders. Improvements in the IT infrastructure will positively effect the government organisations in terms of technologies and business processes (UN, 2008;

Al-Khouri and Bal, 2007; Signore *et al.*, 2005). Moreover, the basic value of e-government is to enable different stakeholders to access government services around the clock (Albusaidy and Weerakkody, 2008; Bwoma and Huang, 2003; Reffat, 2003). According to many researchers, there are several benefits derived by e-government. For example, e-government implementation reduces government expenditures through direct channel communication between the public sector, private sector and other government organisations, by integrating various government agencies' systems with a single web portal (Al-Khouri and Bal, 2007; Aydinli *et al.,* 2007; Signore *et al.*, 2005). Furthermore, e-government increases public expectations and improves the services, to offer more transparent and accessible services to users (Al-Khouri and Bal, 2007) and create public-private sector collaboration. As a result, the majority of governments around the world are challenged to build their organisations and services to benefit from e-government by establishing one stop access points, which facilitate the retrieval of information independent of the departments offering these services (Huang and Bwoma, 2003).

The benefits of e-government to developing countries such as Saudi Arabia are immense, particularly given the size and extent of the population. Saudi Arabia occupies an area of 2,240,000 square kilometers (about 865,000 square miles) in the southern-eastern region of Asian (MEP, 2008). Thus, distance often hinders citizens from traveling to government departments to access required services; traveling to a capital city to access the services offered by a central government department from a another region is time consuming and costly (Al-Shafi and Weerakkody, 2007; Huang and Bwoma, 2003). Conversely, e-government facilitates the 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 the traditional government in providing services (Huang and Bwoma, 2003; Reffat, 2003).

2.2 Challenges
Where e-government presents several benefits to the private and public organisations, it also results in a number of challenges to the different stakeholders internal and external of the organisations. For example, privacy and security issues have been highlighted by many researchers as a significant factor impacting e-government implementation (Jaeger and Thompson, 2003; Fountain, 2003; Lam, 2005; Chen, 2002; Aldrich *et al.*, 2002; Evangelidis *et al.*, 2002). Likewise, establishing an integrated e-government infrastructure is a major challenge faced by many government organisations around the world (Wang *et al.*, 2004, Medjahed *et al.*, 2003, Virili and Sorrentino, 2009). This opens new channels to sharing information through the internet and is a relatively difficult challenge especially in developing countries. Further, research has also identified many barriers to adopting e-government services, such as trust (Carter and Belanger, 2005; Ebrahim and Irani, 2005; Ndou, 2004; Dawes *et al.*, 2004), computer literacy (Pilling and Boeltzig, 2007; Pan *et al.*, 2006), authentication (Akman *et al.*, 2005), risks (Phippen, 2007; Ebrahim and Irani, 2005), usability (Criado and Rami, 2003; Choudrie *et al.*, 2004), accessibility and availability (Jaeger and Thompson, 2003). Of the aforementioned challenges and barriers, computer literacy and accessibility are largely caused as a result of digital divide; this often represents the gap between the economically well-to-do and less well-to-do in a country as well as developed and developing nations (Lam and Lee, 2005). The digital divide means the gap that appears between citizens that use technology, have access to internet, and

have literacy skills, and those citizens who do not have access to the technology (Belanger and Carter, 2006; Fountain, 2003). According to Belanger and Carter (2006), the digital divide is classified into the ability to access the internet and citizens' skill needed to use technologies. Further, barriers to accessing the internet were classified as age, level of education, income. The skill needed by citizens was 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 citizens are utilizing e-government services, the digital divide can be considered as one significant barrier that impedes many citizens from adopting e-government services (Belanger and Carter, 2006).

Furthermore, extending from the challenges mentioned above, there are many studies that have highlighted the importance of trust in the adoption and acceptance of new technologies and have assessed trust as an important factor that predicts user intention of e-services (Pavlou and Fygenson, 2006; Gefen *et al.*, 2005). Once the interaction between parties takes place in a non-physical mode from a remote distance through intermediaries like the internet, trust becomes an essential central issue to be defined and measured. Trust plays a major role in creating the initial relationship between citizens and e-government, where citizens still do not know about e-services providers (Carter and Weerakkody, 2008). Rotter (1967) defined trust as "an expectancy that the promise of an individual or group can be relied upon." The literature indicates trust is classified into two parts:

(1) trust in the body (entity) that provides services; and

(2) trust in the tools that will be used to deliver services to users.

Teo *et al.* (2008) argued that trust in the body that provides an online service is a necessary condition. However, it is not only important to reach users to use an e-services method: trust in the e-enabler (internet) is considered a significant, salient factor that predicts e-government adoption (Sang and Lee, 2009; Carter, 2008; Carter and Weerakkody, 2008; Gefen and Warkentin, 2002). Moreover, Gefen and Warkentin (2002) argued that trust positively influences the intention to use online government services. The underlying logic of this influence is as follows: when trust is low, citizens are expected to pay more attention, effort and time to finish required online services. Trust would reduce citizens' needs to monitor, control and understand online task interactions, which makes online tasks easier (Gefen and Warkentin, 2002).

Accordingly, there are many risks when sharing information through the internet, such as the risks of privacy and security (Carter and Belanger, 2005). Privacy and security refer to citizens' trust in the electronic medium, where people usually have concerns about the security of the technology in exchanging and storing their personal information, particularly when online financial transactions are involved (Carter and Weerakkody, 2008). E-government adoption, in turn, is dependent upon citizens' beliefs that the medium use by government to provide e-services is highly secure and reliable to be used in providing private information (Teo *et al.*, 2008). Thus, a high level of trust is likely to increase citizens' desire to use e-government (Teo *et al.*, 2008). Also, it influences the take-up of e-government implementation. Developing trust between a government and its citizens is critical for the continued growth of e-government services. Citizens must trust the e-enabler by keeping their information secure and private furthering in order to accept and adopt of e-government initiatives.

While the literature has proved that the aforementioned factors are critical attributes for e-government adoption success, the absence of basic ICT infrastructure, particularly in developing countries often prevents these attributes being satisfied. Moreover, the literature suggests that offering multiple methods to access government services for different stakeholders, such as: computers, internet, wireless devices, TV network and mobile service centers, etc. is seen as good practice in e-government service delivery (Sarikas and Weerakkody, 2007). If the ICT infrastructure is inadequate in a country, these channels of service delivery are unattainable, which may consequently result in digital divide. According to Al-Shehry *et al.* (2006), Saudi Arabia is facing a significant risk of digital divide, not only among citizens in general but even among employees in the government realm. Similarly, the study conducted by Abanumy and Mayhew (2007) illustrates the lack of web-based information availability in Saudi Ministries. However, the same study finds that there are substantial improvements in the online presence in Saudi Arabia; for example, in 2003 up to 13 ministries had web sites and 18 ministries in 2005, compared with 20 ministries in 2007. However, the study also explores the issue that the information provided by the different ministries in Saudi Arabia does not meet citizens' expectations due the lack of information availability (Abanumy and Mayhew, 2007). The diffusion of e-government services has been given much attention by a number of researchers (Eyob, 2004). For example, Heeks (2005) suggests that the rate of adoption and diffusion of e-government and the factors influencing adoption and diffusion varies between countries. Heeks (2005) also explains how e-government initiatives differ from developed counties like European nations, to middle-income countries like Latin America and East Asia, to those developing countries that make no progress or limited usage of ICT in an e-government context.

2.3 The role of intermediaries in delivering public services

There is increasing concern that the roles of intermediaries are being eliminated when technologies are introduced (Gellman, 1996). 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 web sites via www) are diffused over societies; this will encourage bypassing of roles of traditional intermediaries. 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 (Bailey and Bakos, 1997; Sarkar *et al.*, 1998). Bailey and Bakos's (1997) argument relies too heavily on qualitative analysis of 13 case studies; their findings showed that numbers of roles for traditional intermediaries emerged in the context of electronic markets which cannot be easily eliminated by direct interactions via the internet. Four roles identified by Bailey and Bakos's study are as follows: aggregating, matching supplier and customer, providing trust, and providing inter-organisational market information. First, intermediaries may enhance trust: by reduce risk of transactions failure, and ensure transactions between parties have completed; keep all parties up to date (service providers and requesters) with the transactions processes. Also, traditional intermediary may provides legal contacts between parties, providing the authentication and security communication needed in such relationship (Bailey and Bakos, 1997). Another role of Bailey and Bakos's study is, intermediaries facilitate the transfer of information between parties, in case of lack of a

reliable infrastructure and the standard electronic service, thus, promoting a desire for value added by the facilitator (third party). Third role of Bailey and Bakos's study is about matching a customers' need of services to supplier's 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 intermediary is often invisible; for example, users support and help to use new systems (e.g. a 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.

The concept of using a third party or intermediary to facilitate access to a product or service can offer several benefits to the recipients (Bailey and Bakos, 1997). When taken in the context of government or public services, intermediaries help to increase the points of availability of services for citizens and help increase the adoption of public service delivery from the government perspectives (Griffin and Halpin, 2004). Second, using an intermediary supports 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). Moreover, this business model can be technology driven and is scalable, as per public adoption rates from the citizens' perspective. Further, as literature of e-government adoption reveals, governments worldwide face long-term challenges, in which adoption factors such as trust play a major influencing role; thus, the role of intermediaries in e-government context can help in protecting government and citizens from opportunistic behavior (Bailey and Bakos, 1997). According to Sarkar *et al.* (1995), the role of the electronic intermediary will reduce the perceived risks of e-services and produce a trusting environment. 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). The intermediary role has emerged as reaction to a different set of specific circumstances which are associated to the 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 UK and USA, the post office is considered an independent agency that is responsible for mail delivery and communication gateway between business and individuals.

3. Research methodology
To empirically explore and validate the arguments set out above in deep and meaningful manner, a qualitative case study approach was considered to be suitable (Walsham, 1993). The research process is shown in Figure 1. 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 the context of this paper, data were collected via documentation provided, interviews, and observation. Data collection via documentation consisted of official information reports published by
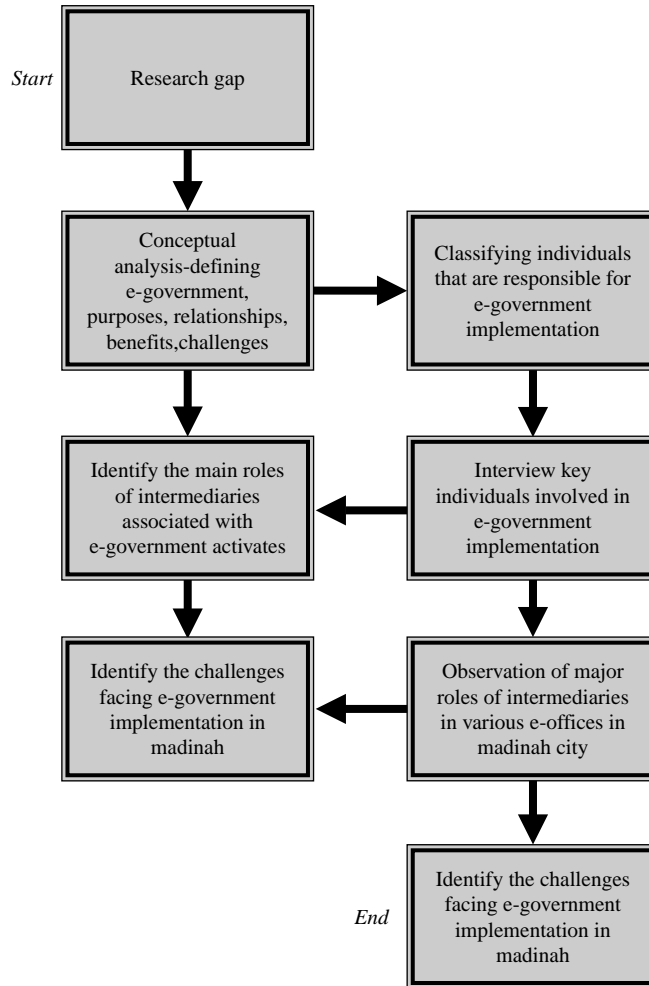
Figure 1.
Stages of research process

the "imaratalmadinah organisation" within the Saudi Arabia Government realm. These publications do not provide an overall illustration of the current state of affairs; on the contrary, to a certain extent they highlight the major benefits and current challenges facing e-government implementation in Madinah City. As the purpose of this research is to investigate the current state of the Madinah City e-government initiative and to examine the role of intermediaries in an e-government context, the authors adopted an in-depth interview strategy. Interviews are regarded as the main tool of qualitative research for data-collection process (Denzin and Lincoln, 1998). In this research, interviews constituted the main data source in the case study. The interviews were conducted between August and November 2008, by visiting the interviewees in a large government department at Madinah City.

Two BD of a large government department of Madinah City were interviewed using semi-structured interviews (Bryman and Bell, 2003), which lasted around an hour and half and offered the opportunity to obtain an overview of the 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 interviewees decided a convenient time and were given enough time for the interviews. They 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 analyze the data. The interviews were transcribed immediately after completion.

The interview also focused on exploring the benefits and challenges facing the e-offices, the primary channel for e-government diffusion in Madinah. Another semi-structured interview was conducted with one of the BDs of the Steering Committee of the e-government project in Madinah City. The main advantage of semi-structured interviews is the flexibility they offer in understanding events by getting more detailed information (Yin, 2003). The interviews were complemented and supported with observation, by visiting three e-offices in Madinah City in different areas. 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 helps the authors to compare the written and spoken version, and increased the reliability of findings by confirming evidence from multiple sources.

4. Case study – Madinah City e-government initiative and the role of intermediaries in delivering public services

The e-government program in Madinah is a partnership between the government and private sector. Based on this partnership, electronic services are developed, managed and expanded on an incremental basis in Madinah City. According to the BD, the e-government program in Madinah City 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. However, all of these projects are still under study only the Khdamatec (e-office) project has been established (Denzin, 1989). The concept of e-government in Madinah is designed to cover 60 government bodies working in the region. This program includes three phases:

(1) *First phase.* Strategic studies to determine the readiness of all government agencies operating in the region.

(2) *Second phase.* Solutions and programs that will bridge the technical and human gaps.

(3) *Third phase.* The figure of economic and social development in order to support the program in continuing investigating feasibility and stability for the long-term. This phase includes the development of civil investment companies that support the work environment and non-government organisations in the

area of knowledge. The overall e-government program is facilitated by a number of electronic offices (e-offices) called "Khdamatec" (Imaratalmadinah, 2008).

The overall vision of Khdamatec (or Madinah e-offices) involves the management and operations of electronic service delivery and related systems, and 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 to deliver services to citizens and to assist those citizens who are less computer-savvy to adopt e-government systems. The motivation for establishing the e-offices was mainly influenced by the following:

- the difficulty of verifying the identity of stakeholders (e-identification);
- the challenges that Madinah citizens faced using technology and accessing internet (digital divide); and
- the difficulty of finding reliable methods that citizens can follow in order to pay services that request a payment (e-payment).

As aforementioned, Madinah has adopted a multi-channel system for citizens to interact with the government services using different methods. In this context, Madinah's strategy for developing e-government revolves around the use of multi-channel systems particularly to reduce any digital divide that single channel (online-only) e-government may cause. Based on previous empirical findings by Sahraoui *et al.* (2006) in Saudi Arabia, the gap of the digital divide is very high; the rate of internet usage by citizens is 14.87 percent, with illiteracy rate at an alarmingly high 30 percent. However, the interviewees in this case study argued that a high level of usage of internet and electronic services has appeared within the last three years. Nevertheless, the Communication and Information Technology Commission (2008) reported that 51 percent of the total population (average age between 15 and 60 years) use the internet and electronic services in Saudi Arabia. According to the statistics report by MI (2006), in cities more than 80 percent of citizens use internet, as compared with less than 20 percent in the villages. This is regarded as a barrier related to the digital divide; to resolve this, a solution has been proposed involving private investors who would establish service centers (e-offices) in Madinah in order to assist citizens with electronic transactions. These e-offices follow government legislation and technical requirements in terms of security, data protection and electronic transactions. This statement was supported by e-business literature (e.g. Section 2.3), which found that a number of intermediaries emerged with added-value in the development of e-commerce.

4.1 E-offices facilitating e-government services in Madinah City
The e-governmental network setting in Madinah City can be categorized into three main types of players (Figure 2), which can be labeled as service providers (government departments), service requesters (citizens and other stakeholders) and intermediaries (e-offices). Service providers can be all kinds of organisation involved in providing and delivering electronic government services. Service requesters, in this case, are citizens and other stakeholders who request public services, and an intermediary is defined as a private organisation fully or partly information technology-based that aims to bring
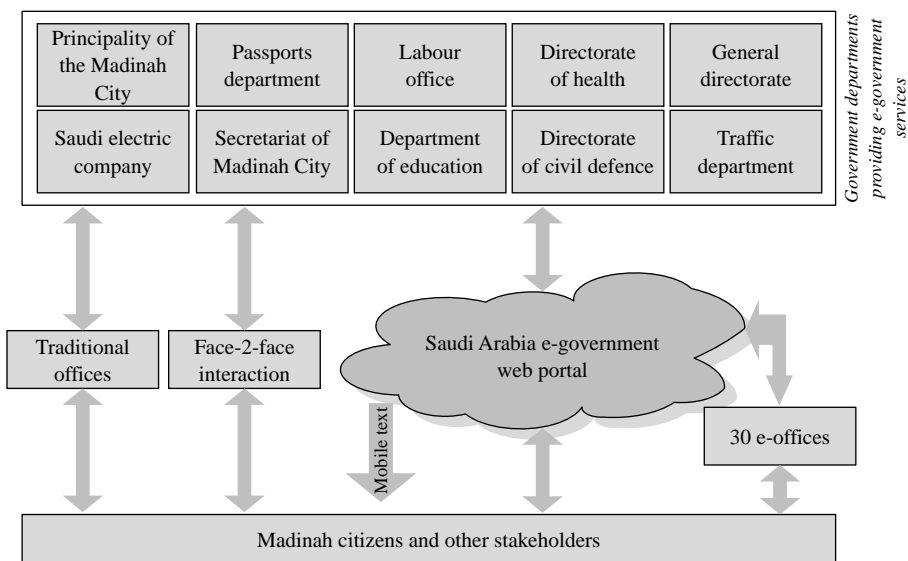
Figure 2.
E-government concept in
Madinah City

together a government department and its citizens. The aim of using e-offices in Madinah's e-government strategy is to help citizens adopt e-services using a third part intermediary channel where citizens can enroll with the e-offices and use e-government services with the assistance of an administrator, i.e. Khdamatec workers. These workers access the central e-government portal and complete the online transactions (i.e. print required information from relevant government agencies or make payments to a government department) on behalf of citizens. The identification of citizens in e-offices is controlled by password and national identification number and the e-officers are able to track citizens' transactions, applications for a service and/or request by using these details anytime, i.e. 24/7. The e-offices are the initial gateway for citizens to access different government services; this is done using a unique and secure gateway code that is offered to the citizen by the e-office. According to the interviewees, to connect to e-government systems, citizens are required to have a code (user name and password), which is given after they register with the e-office. These codes can be only given if the citizen presents themselves physically at the e-office and present their national ID. Citizens' authentication is one of the main reasons behind the e-office concept. In addition, government departments use mobile text messaging to confirm to the citizen that they have received the citizen's request from their e-office or from the citizens, and use the same method to inform them when the service/transaction request is complete. Figure 2 shows the way e-offices function in parallel to the other multi-methods that are offered for accessing public services in Madinah City.

The traditional offices, as shown in Figure 2, work as intermediaries to deliver public services, but use manual methods. In addition, these traditional offices work on behalf of citizens as a front-end of government agencies. Madinah's e-government strategy evolved through many objectives. One of the main goals is to deliver e-services to citizens. To achieve this, it was crucial to involve the traditional offices, which have been operating in the region for a long time as intermediaries between government and their

citizens have enjoyed the trust of citizens and provided frequent face-to-face contact with them. In reality, in the Saudi context, there are many traditional offices that promise to facilitate public government services to citizens and different stakeholders. Therefore, the Saudi Government authorized private sectors to be service providers for the physical intermediaries' offices, in order to help citizens achieve greater access to public services throughout the country without needing to visit government departments. While the role of traditional offices is to facilitate government services, it also aggregates public services in one office, where these offices promise to physically visit different government departments in order to complete services required by its citizens (manual integration). It is essential to state that these traditional service providers have been established for many years, and the experiences that these service providers have gained have widened their social network within governmental departments, making their work easier and faster. In fact, the e-offices that provide government services electronically were originally traditional offices; in order to convert them to e-offices, there are some standard requirements to be reached. For example, staff's qualifications, commitment in formal attendance and some technical requirements for data security. In Madinah City, 30 e-offices are built around offering services from different government departments. They stand as intermediaries in order to facilitate communication between citizens and these government organisations. Ten government departments have participated thus far from a total of 60 in the region (Table II). However, not all departments in the region have participated in the e-government projects, the participating departments were selected in accordance with the services that concerns citizens' daily life and level of the departments' readiness in providing e-government services.

The infrastructure plans for the e-government projects in Madinah City include: PCs and software, networks, databases, e-mails, mobile computing, and web sites. These equipments and applications are provided by Madinah Government for each department and employees in each department are trained to use new systems. According to the interviewee, "we trained two employees in each government department and provide them high speed internet connections." Relatively, the interviewees explained that they strived to keep the e-services simple to understand and use by citizens in order to create a higher level of citizen satisfaction; the underlying principle was that the governments' web site should be designed in a way that would be easy even for the elderly and non-qualified citizens to understand and use. The objective is to increase the level of e-literacy among citizens. This program will provide a basic password and username to the e-government portal; this will lead to increase the level of awareness and increase the usage of online government services.

In January 2008, Imaratalmadinah (2008) reported that the number of beneficiaries of e-government services in Madinah City was more than 50,000 citizens. The services that have been launched to date amount to 396, whereas, the services that are remaining and planned to be released are around 76. Table I explores the various uses of electronic services in Madinah city.

Table II illustrates the types of e-government services that already exist in Madinah City.

Interviewees also suggested that the e-offices concept has reduced the waiting time for citizens' services and/or applications to be processed. While the traditional modes of government services and processing of various applications took anytime between

24 and 48 hours, the new e-offices concept takes between 5 and 20 minutes. This is dramatic improvement in efficiency of the service level.

4.2 Challenges facing diffusion of services using e-offices

While the overall implementation progress of e-government has been slow nationally, the introduction of e-offices has not done much to convince citizens to use e-government services in Madinah City. Interviewees responsible for overseeing e-government implementation in Madinah City identified a number of challenges currently facing the e-offices. The main challenges are as illustrated below.

Challenge one. The main challenge facing the e-offices relate to funding issues in relation to marketing the concept and spreading the awareness of e-government among Madinah City citizens. The interviewee suggested that the income generated from the e-offices is currently inadequate to support a media campaign (i.e. using TV, mobile text messaging, and news paper) to promote awareness among citizens.

Challenge two. 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 available online; this has resulted in lack of consistency in promoting the idea of e-government in Saudi Arabia.

Challenge three. Moreover, according to the interviewees, there are still concerns about the security issues in implementing e-government technologies; they 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 internet and (b) resistance to change in government employees and requiring citizens to visit the government departments in order to get the services […]

Services	Request new services	Procedures	Information	Tracing request	Request new services	Total
Launched	91	91	87	88	39	396
Planned for launch	22	17	18	19	0	67

Table I. Services in Madinah City

Sequence	Government departments	Service type	
		Queries	Tracking
1	Principality of the Madinah	19	44
2	Secretariat of Madinah	2	9
3	General directorate of water in Madinah	5	10
4	Department of education	6	8
5	The traffic department Madinah Region	44	88
6	Madinah passports department Madinah area	5	10
7	Directorate of civil defence Madinah region	2	4
8	Saudi electricity company	6	2
9	Madinah district police	12	24

Table II. Enabled services currently available at the Khdamatecs' web site

However, in terms of promoting privacy among citizens to encourage them to use e-services, Madinah City put a high fine for using the e-government portal through e-offices. These strict regulations aim to maintain the use of the e-government portal, increase its credibility in front of citizens, and guarantee the information submitted for government's departments is correct. This has undoubtedly led to adoption and diffusion of the e-office concept and e-government in the wider context at a lethargic pace.

Challenge four. The interview and observation sessions revealed that the services provided through the e-offices 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.

Challenge five. One of the negative impacts added by BD was the integration of different government departments:

> [...] 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 challenge concerns in the current e-government model is the integration between different government agencies [...]

Challenge six. As reported by the interviewees, ensuring that the services offered cater for the elderly citizens of Madinah City is another major challenge identified in the e-offices. As explained by MI (2006), technologies such as mobile phones, computers, and internet are mostly adopted by young citizens between 16 and 35 years. However, according to MEP (2008), although the population older than 15 years in Madinah City is reported to be around 750,737, only around 50,000 citizens are using e-government services. This indicates that only around 6.7 percent of citizens participate in e-services, either through e-offices or the Madinah e-government web portal. However, one of the positive aspects identified by the interviewees related to the attitudes and culture of the Madinah citizens was that:

> [...] culture may not affect the adoption of e-government services in Madinah City, i.e. when applying for the payment services for the first time in Madinah City, using the card, the process was considered as useful and successfully adopted by citizens [...]

Challenge seven. The interview sessions highlighted another challenge, i.e. authentication – how to identify citizens using e-government services. This challenge is due to a lack of trustworthy security systems, which is acting as a barrier and preventing the development of e-government services.

5. Discussion and conclusion

The current study found that, Madinah Government has positioned e-office intermediaries between government departments and citizens, at the core of their local e-government strategy agenda. Madinah aims to modernise local government and bridge citizens' social exclusion, resulting from the digital divide (Faris *et al.*, 2009). In this study, although the authors were concerned with the role of electronic intermediary (or e-offices), and some important challenges faced by Madinah city to develop e-government services, such as trust, security, privacy, accessibility, and availability were identified. The results of this study show that there are a number of reasons why citizens may prefer to access their government services from an intermediary (third party) rather than directly from the internet. First of all, the fact the low rate of internet access in Saudi Arabia, and the limitation in citizens' capability toward e-services adoption, e-offices

have expertise to overcome this challenge. There are similarities between the attitudes expressed by authors in this study and those described by (Belanger and Carter, 2006) and Jaeger (2003), that digital divide is a significant barrier impedes citizens of use e-government services a cross-culture and nation. Further, this finding further supports the idea of Heeks (2005) that the factors influence adoption and diffusion rate varies between countries. Second, as literature showed, trust would be an issue in a non-physical environment like internet, as citizens usually think internet is not a safe place to communicate; thus, uncertainty situations may force citizens toward e-offices as a useful available gateway option. However, when the services carry an expense, users may prefer to use the free traditional channels (face-to-face) instead of electronic intermediary mode (Chircu *et al.*, 2000). It is important to note, there is very little marginal cost when citizens join an e-office intermediary; however, the benefits that the Madinah Government departments and local citizens have gained are substantial in term of minimizing the effect of adoption factors. Yet, the cost factor could be one major reason for slow growth of e-offices implementation and its low level of usage by citizens of Madinah City. Taken together, these findings suggest that although there is a role for intermediaries in promoting e-government success and furthering development of delivering public government services to stakeholders, much more needs to be done to promote the concept.

5.1 Limitations/implications and future recommendation

5.1.1 Limitations and recommendation. This research focused on interviews in one organization responsible for e-government implementation and observations in three e-offices in Madinah City. However, to increase the ability to generalize our empirical findings, the authors of this paper have planned to pursue further research in fourth quarter of 2009 and establish other interviews with e-government officials in Madinah City, as well as interviewing the people who own these intermediary e-offices. Another limitation of this study is this research is based on one city in Saudi Arabia, which has adopted the intermediary concept under their local e-government strategy. It could be noted that the results in this study may not be applicable to others cities in Saudi Arabia or even other countries that have similar economical, social and cultural situations. Future research could target other cities in Saudi Arabia to examine the willingness of other traditional offices to shift to intermediary e-offices gateway is vitally important. Finally, the current study was not specifically designed to evaluate factors related to citizens' perspectives in value added by such intermediary, thus, other study could targets Madinah citizens to measures the value adding to them after adopting e-offices gateway services.

5.1.2 Implications for practice. The findings of this study have a numbers of important implications for future practice. Increasing the availability, accessibility of e-government services and bridging the digital divide are significant indicators for citizens' willingness to adopt, accept, and use e-government modes also, that will help the government to diffuse e-services in society. There are many ways that governments bridge the digital divide and help citizens to cope with the new technologies, such as using the media (TV, newspapers, government web sites, mobile text messages, etc.) to increase the awareness of e-government services by educating people on how to use online services and increase awareness about the benefits and advantages (e.g. saving time, saving money, and reducing physical contact with government employees) that

they can gain through adopting e-services. A low awareness of e-government services is a negative factor that excludes citizens from the adoption and acceptance of e-government services. The Madinah Government needs to encourage its citizens using the aforementioned types of advertising. Doing so may result in the widespread promotion of e-services to many citizens. Literature indicates that citizens who know of e-government services are more likely to adopt and accept e-services. Carter and Weerakkody (2008) suggested that, in terms of relative advantages, governments that offer additional benefits, such as easy and fast access to government services, they will better diffuse e-government services into society. Furthermore, governments should provide a budget to support media campaigns and government infrastructure readiness. Reliable and integrated infrastructure may be the most difficult part of e-government development and implementation, especially in developing countries in obtaining a higher level of e-government diffusion and facilitate the adoption for all citizens alike. Currently, Madinah's infrastructure is having a negative impact in the adoption and diffusion rate of e-government services.

Also, Madinah Governments should be concerned with government employees, in terms of ensuring that staff can effectively use a new technology, they should provide employees with the correct training facilities to be able to use e-government services. Moreover, it is vital to increase awareness in order to reduce resistance to change caused by believing that employees will lose their jobs after the e-government is established. Also, Madinah Government may need to retrain workers, in e-offices, in such a way to be qualified to help citizens to use e-government services and also to ensure that citizens are able to use an e-services gate. Madinah Governments may be able to gain benefits from training workers in traditional offices that already exist around the country to increase internet access and reduce e-literacy in Saudi villages that have less-internet access and a low technological skills. In the Saudi context, young citizens are more likely use new technologies; thus, the government should implement user-friendly applications that meet the citizens' future expectations (Kurunananda and Weerakkody, 2006) and provide young and elderly citizens alike with a computer literacy education. Furthermore, to attract citizens to adopt e-government services, as well as to ensure the successful implementation of e-government, the Madinah City departments need to cooperate in order to allow two-way communication between different government departments on the one hand and with the public (citizens) on the other, all through one portal. Government departments should actively participate to provide online services in e-government portals, as this may lead to rapid increase in the adoption of e-government services. Madinah Government need to highlight the reasons behind the low rate of e-government adoption in general, also the low rate of adoption of e-offices in particular.

5.1.3 Implications for research. The proposed study is an attempt to understand the most hindering factors that affects e-government adoption and diffusion rate in Saudi Arabia. To date, few studies have attempted to explore the factors that influence the adoption and diffusion of e-government services in said context, and this study makes great strides in examining the role of local government intermediary e-offices as a facilitator between the government and citizens (and other stakeholders). As long as this research highlights the role of intermediaries (e-offices) in the adoption and diffusion of e-government services, it also extends the previous research by highlighting the most salient factors affecting adoption rate. This study can serve as an initial point for future research in citizens' adoption of e-government in Saudi Arabia. In our research, we focus

on factors affecting citizens' adoption from a literature perspective. We also intend to investigate the role of intermediaries along with adoption factors. Authors of this study highlighted this issue as a literature gap, which needs further investigation to illustrate the role of intermediaries in the area of developing e-government services.

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