

Citizen Adoption of E-government services

Sulaiman Alateyah, Richard M Crowder and Gary B Wills

Electronics and Computer Science
University of Southampton
Southampton, UK

Abstract— This paper considers the challenges that face the widespread adoption of E-government in Saudi Arabia. Will be using the Saudi Arabian experience as our main case study, E-government can be defined based on an existing set of requirements. In this paper we define E-government as a matrix of stakeholders; governments to governments, governments to business and governments to citizens using information and communications technology to deliver and consume services. However, E-government has been implemented for a considerable time in developed countries. However E-government still faces many challenges to be implemented in developing countries such as Saudi Arabia. Adopting E-government among citizens is a big challenge that facing the government of Saudi Arabia.

Keywords-component; E-government, adoption, citizen, G2C.

I. INTRODUCTION

Nowadays, the World Wide Web (WWW) has become a necessity and indispensable tool in the daily life of people worldwide [1, 2]. Hence many people prefer the on-line version as a quick and easy approach to achieving their daily tasks and other activities such as reading newspapers, paying bills, etc. In parallel with the rapid development in information and communication technologies (ICT) and the significant improvements in digital connectivity, government departments are being made to reconsider their internal and external relations, and transaction processes [2, 3]. However, this technology has prompted the government's organizations and affiliation to reconsider their internal and external relations and transaction. Therefore, and in order to succeed and build for the future the administrative processes of government, government have been transferred to electronic systems. Governments worldwide are thinking of establishing an electronic system to the government organizational and agencies (E-government) in order to provide and facilitate many services to the people anywhere and anytime to overcome the tedious traditional routine procedures, based on the United Nation [4] conceptual framework of the United Nations E-government program. This UN programme is embedded in the paradigm of human and social development. According to [5]:

“E-government in this context encompasses the capacity and the willingness of the public sector to deploy ICT for improving knowledge and information in the service of the citizen. In

addition, E-government Development is a function of not only a country's state of readiness but also its technological and telecommunication infrastructure and the level of its human resource development, among other factors, and at a minimum should be based on the level of all three”.

The Saudi government has launched the YESSER Program and is the country's first National E- Government strategy [6]. The aim of this initiative is to create user centric electronic initiatives that focus on improving the government services to the public sector. The E-Governance strategy will provide the citizen's access to all government related services and information. This will enhance the accountability of the public sector in Saudi and it is being implemented in all ministries in the country. This Saudi initiative to implement E-government has been criticized for not being feasible and that the transaction systems are merely limited to business.

II. LITERATURE REVIEW

A. E-government

To define E-government from a single perspective is relatively easy, but defining E-government in general which can suit everyone's view or needs is almost impossible. Based on the work by Meng Seng, et al. [7], it has been noted that although E-government terms have become a buzzword across the world, there is evidence of insufficient or a lack of consensus on the meaning of E-government, especially regarding the main characteristics of E-government [7, 8]. E-government can be defined in different ways. For instance, E-government has been employed to mean everything from 'electronic government services over the Internet' to 'exchange information and services with citizens, businesses, and other arms of government' [4]. In addition, E-government can be defined as the use of information technology, especially telecommunications, to enable and improve the efficiency with which government services and information are provided to citizens, employees, businesses, and government agencies [9], or it can be E-government refers to the use of information and communications technology (ICT), and specifically the Internet, as a tool to achieve better government [10, 11]. There are other researchers who defined E-government as an application, for example in [12],

“E-government is the application of information and communications technology (ICT) to accomplish the efficiency, effectiveness, transparency and accountability of informational and transactional exchanges between government to government (G2G), government to business (G2B), and government to citizens (G2C)”.

In addition, Ndou [13] stated that

“E-government means different things for different people. Some simply define it as digital governmental information or a way of engaging in digital transactions with customers. For others E-government simply consists of the creation of a web site where information about political and governmental issues is presented”.

E-government in this paper is defined as a matrix of stakeholders; governments to governments, governments to business and governments to citizens using information and communications technology to deliver and consume services. E-government has the objective of saving money, time, effort with increased efficiency, with due consideration for information security and privacy to all parties.

B. E-government Drivers

The drivers for E-government are still being discussed in the literature. Some researchers state that there are only three common drivers which are Government to Government (G2G), Government to Business (G2B) and Government to Citizens (G2C) [14-16], while [9, 11, 13, 17] identify a new driver which is Government to Employee (G2E). Fraga [17] state that

“Government to Employee (G2E) embarks on initiatives that will facilitate the management of the civil service and internal communication with governmental employees in order to make E-career applications and processing system paperless in E-office”.

1) Government to Government

The G2G sector represents the backbone of E-government in which governments (federal, state, and local) integrate their internal systems and procedures into a central system [14, 16, 18]. The main aim of G2G E-government is to facilitate processes of inter-government organizations by streamlining collaboration and coordination [14, 18].

2) Government to Business

Government to Business (G2B) initiatives receive a significant amount of attention, in part because of the high enthusiasm of the business sector and the potential for reducing costs through improved procurement practices and increased competition [14, 19]. According to Fraga [17] Government to Business (G2B) actively drive E-transactions initiatives such as E-procurement and the development of an electronic marketplace for government purchases; and action Government procurement tenders through electronic means

for exchange of information and commodities, and sale of goods and services.

3) Government to Citizen

It has been mentioned that Government to Citizen (G2C) provide the momentum to put public services online, in particular through the electronic service delivery for offering and exchange of information and communications [7]. Moreover, The Government to Citizen (G2C) sector refers to all dealings between citizens and the government over online medium [18, 20]. According to Alsaghier [18] based on the work by Seifert [14], G2C E-government is designed to facilitate citizen interaction with government and is perceived to be the primary goal of E-government.

C. Challenges facing E-government

To develop any system or framework such as E-government which presents several benefits to the private and public organizations, it also results in a number of challenges to the different stakeholders internal and external of the organizations [2]. Furthermore, there are some barriers facing implementation which should be credited to our mind. The most common barriers, which other researchers found are: trust, privacy, security, computer and information literacy, culture, authentication, technical infrastructure, accessibility, availability and E-government services adoption, these barriers are explored in more detail in the next section.

III. CITIZEN ADOPTION

Adoption is an important aspect for the success of E-government initiatives in developing countries [21]. However, the growing interest in E-government raises the question of how governments can increase citizen adoption and usage of their online government services [22].

A. Adoption around the world

To date, there has been little research exploring factors that determine the adoption of E-government services by citizens in developing countries, especially the Arab world [23, 24]. Moreover, Dong [25] state that:

“Although there were many researchers who had did some research on E-government; seldom did them take the adoption of E-government into account when they did the research”

Despite the enormous potential, citizen adoption of online government services has not been met yet [22]. Furthermore, Carter [9] agreed with other researchers, that although numerous studies have analyzed user adoption of electronic commerce [26-28], yet, to date, no study has identified the core factors that influence citizen adoption of E-government initiatives.

B. Factors Influence Citizen Adoption

According to Colesca [29] many studies focused the citizen adoption of E-government services suggest that trust [30], security [31] and transparency [32] are major issues for E-government adoption. Based on [33], which has been cited by [21], high adoption of the initiatives increases the chance that

E-government will facilitate social and economic benefits to citizens. In addition, Alshihhi [23] states:

“The ever-increasing use and adoption of information and communication technologies by Kuwaiti government departments have helped in building an IT infrastructure capable of adopting E-government services”.

User acceptance of IT is deemed a necessary condition for the effective implementation of any IT project [24, 34]. Adoption comes after direct experience with the technology and after an individual has decided to accept the technology [24, 35]. A number of studies have investigated the adoption of E-government services in developed countries [24, 36], whereas relatively little has been undertaken in developing countries [23, 24]. Successful implementation of E-government initiatives in that context requires complex customization between technology and implementation context in developing countries [21, 37] result in designing citizen adoptable E-government initiatives is still a challenge to many developing countries governments [21]. AlAwadhi and Morris [38] conduct a study in Kuwait to explore factors that affect the adoption of E-government services. The factors are usefulness of E-government services, ease of use, reforming bureaucracy, cultural and social influences, connections (*wasta*)^{1*}, face-to-face interaction, cultural differences, gender issues, technical issues, and trust in the internet and lack of awareness.

IV. DISCUSSION

Based on the literature review we will consider three aspects of E-government. These are firstly, the difference between electronic and non-electronic systems which will be presented by two scenarios to give a clearer picture. Secondly, the challenges which are facing E-government implementation in Saudi Arabia and finally the challenges which are facing E-government adoption among citizens.

A. Electronic compared with paper based systems

In the daily life, there are enormous amount of services that are offered and consumed. These services can be consumed or produced in none electronic systems such as conventional government or in electronic system like E-government. However, there are benefits and drawbacks between using none electronic and electronic procedures.

Figure 1 shows how services and transactions are delivered and consumed in none electronic procedure. Figure 2 presents the electronic system. To make this clear, two scenarios have been written: making a passport application and school communications to parents and pupils have been chosen as examples.

1) Scenario 1: Passport application

Passport application, in the paper based approach the applicant collects an application form from passport center, fill it up, has their picture taken, sign the form and pay fees, prior to

submitting it to passport center. These procedures consume applicant’s effort, time, money and paper. In addition, the staff who receives the application might not be able to deal with application easily if the applicant’s has not completed a section correctly. On the other hand, in an electronic system approach applicant can apply in one of two ways. First, download the application from internet, complete it electronically and send it back by email, with permission for eft (electronic funds transfer). Then, the applicant goes to (in the UK) a post office to have his picture taken and sign off the application. An alternative approach is for the applicant can go to post office, have his picture taken, sign if applicable and have his application completed (this will require the payment of a fee, but remove almost all possibility of errors). These two ways is save time and effort, increase efficiency and are environment friendly.

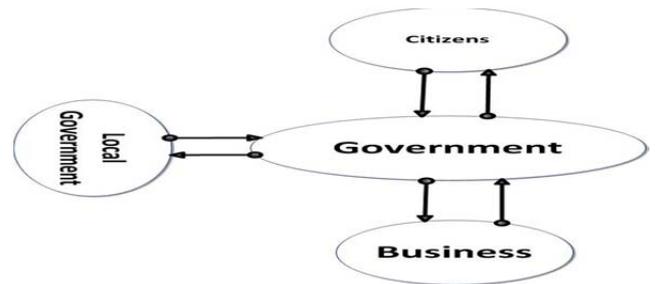


Figure 1. Transactions in Conventional Government

Scenario 2: School communications

School communications (e.g. calendars, letters, permission slips, end of term reports), in paper based schools are usually send home with the children during the school year. This route risks loss (either accidental or deliberate) by the pupil. if this information is lost, it will cause problems firstly for the parents secondly for the pupil.. This means, for example, if there is a requirement to visit the school and the parents do not know it might put them in trouble when they have to work full-time or having an important meeting. Moreover, a paper based system costs money by printing paper and is not environmentally friendly. In contrast, in electronic system, parents can find all the schools’ calendars letters by accessing the school’s electronic portal. This help parents to track their children’s progress and update their information at any time they want. In many schools in the UK this has been taken further, with the pupils using the system to receive homework, teaching material and other support.

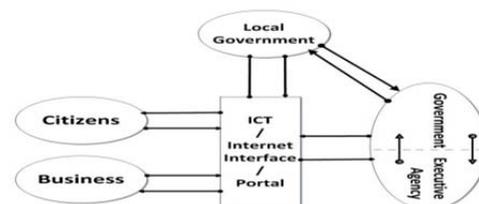


Figure 2. Electronic transactions (E-government)

¹ It is Arabic word which means being served because you know someone in the organization otherwise you will not get these services if you don’t know anyone, for instance, jumping the queue.

B. E-government challenges and barriers to introduction in Saudi Arabia

In Section II, the literature review, we showed that many researchers have mentioned challenges and barriers that facing E-government implementation and development in many countries either developed or developing countries. In addition, each country, state, city or even an organization has challenges and barriers. Some of these challenges are common such as security, privacy and trust while there are other challenges different from county to country, city to city, organization to organization, or even from department to other department in one organization. For instance, culture in Asia is not as in Europe. Therefore, Saudi Arabia E-government, for instance, has challenges and barriers which some of these challenges have been mentioned by other researchers. The question here is "Does Saudi Arabia E-government can overcome these challenges to develop the Saudi's E-government". To answer this question, some of the relevant challenges, which have been mentioned by researchers, are technical issues [39], trust [2, 22, 40-43], privacy and security [2, 40, 44], computer and information literacy [2, 44-46], culture [47-49], technical infrastructure [45], accessibility and availability [2], and establishing an integrated E-government infrastructure [2, 50, 51].

C. Challenges facing E-government adoption in Saudi Arabia

There is a question should be asked to start this research and investigate which is "How can Saudi's government overcome these challenges to help citizens to adopt E-government?". To answer this question and help people adopting E-government services, there are some factors should be credited to government's requirements. These factors can be found by investigation and conducting a study or survey to find challenges that facing citizen adoption and how overcome these challenges. In the citizen adoption, [38] mention factors influencing the adoption of E-government services which have been founded by conducting a study in Kuwait. Kuwait is one of the Gulf nation countries and there are many similarities between Saudi Arabia and Kuwait including culture, religion, geographic, resources, etc. In addition, some factors that facing citizen's adoption which has been mentioned by other researcher based on their countries and still not investigated yet in Saudi Arabia are trust [2, 13, 29, 30, 40, 52], computer literacy [2, 44, 46], authentication [2, 53], risks [2, 52], accessibility and availability [2, 8], and usability [2, 54].

V. CONCLUSION

Currently the World Wide Web (WWW) has become a necessity tool of daily life. In addition, people prefer the on-line services as a quick and easy way to doing their daily activities such as reading newspapers, and paying bills. Therefore, proposing and developing electronic services has become a high priority in most countries. Moreover, since the rapid development in information and communication technologies (ICT) and the significant improvements in digital connectivity, adopting E-government services by citizens is the concern of many governments. Therefore, this paper examined how to encourage citizens to adopt E-government

services and what are the challenges facing those trying to implement and develop E-government.

While E-government has been introduced into many countries, it still has not been fully introduced across the globe; due to range of technical, sociotechnical and social challenges. This paper has identified and number of areas that has restricted the introduction of E-Government into Saudi Arabia, the majority of which are centered on citizens understanding the benefits to, and the levels of protection afforded to, themselves as users.

In reconciling these challenges initially, it is important to know what Electronic Government (E-government) is from the perspective of Saudi Arabia. E-government can be defined based on their requirements, since there is no all-encompassing definition. E-government has been developed and implemented for a considerable period of time in developed countries, while implemented and developed in most developing countries is still in its infancy. Therefore, governments, businesses and citizens in developed countries have many benefits from using E-government services. In addition, many researchers have found and discussed the challenges faced when implementation and adoption of E-government. There are common challenges such as privacy, security, trust, culture, computer and information literacy and IT infrastructure. There are also many other more specific challenges including; authentication, digital divide and funding shortage, that are faced only in some countries. Adoption is a critical issue to governments who want to implement and develop E-government. However, governments can find aspects of the process that can influence and encourage citizens to adopt E-government services. Nevertheless, challenges and barriers can be overcome by investigating, various approaching to adopting E-government services and presenting an appropriate framework that can suit most similar countries such as Gulf Nation countries.

It can be argued that the challenges are identical in any country. Our studies have shown that while this is correct, the detailed solutions to the individual challenges must be driven by a close understanding of the country's current Governmental structure as well as the interaction and expectations that existing within a country's individual culture.

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REFERENCES

- [1] J. Pérez-Villaplana, "Technology for E-government: A Study Case," *The European Journal for the Information Professional*, vol. 4, pp. 33-38, April 2003.
- [2] F. Al-Sobhi, V. Weerakkody, and M. M. Kamal, "An exploratory study on the role of intermediaries in delivering public services in Madinah City: Case of

- Saudi Arabia," *Transforming Government: People, Process and Policy*, vol. 4, pp. 14-36, 2010.
- [3] P. Beynon-Davies and M. D. Williams, "Evaluating electronic local government in the UK," *Journal of Information Technology*, vol. 18, pp. 137-149, 2003.
- [4] United Nation. (2010, 05/07). *The United Nations E-government Development Database*. Available: <http://www2.unpan.org/egovkb/about/index.htm>
- [5] United Nation Public Administration, "E-government Survey2010, Special Awards," 2010.
- [6] S. Sahraoui, G. Gharaibeh, and A. Al-Jboori, "E-government in saudi arabia: can it overcome its challenges?," *Egovernment Workshop '06*, 2006.
- [7] W. Meng Seng, N. Hideki, and P. George, "The Use of Importance-Performance Analysis (IPA) in Evaluating Japan's E-government Services," *Journal of Theoretical and Applied Electronic Commerce Research*, vol. 6, pp. 17-30, Aug. 2011.
- [8] P. T. Jaeger and K. M. Thompson, "E-government around the world: lessons, challenges, and future directions," *Government Information Quarterly*, vol. 20, pp. 389-394, 2003.
- [9] L. Carter and F. Belanger, "Citizen adoption of electronic government initiatives," in *System Sciences 2004*. , Proceedings of the 37th Annual Hawaii International Conference, 2004, p. 10
- [10] OECD, *E-government Studies: The E-government Imperative*: OECD Publishing, 2003.
- [11] I. Alghamdi, R. Goodwin, and G. Rampersad, "E-government Readiness Assessment for Government Organizations in Developing Countries," *Computer and Information Science*, vol. 4, pp. 3-17, May 2011 2011.
- [12] L. Lu, G. Zhu, and J. Chen, "An Infrastructure for E-government Based on Semantic Web Services," in *International Conference on Services Computing*, 2004.
- [13] V. Ndou, "E-government for developing countries: opportunities and challenges," *EJISDC*, vol. 18, pp. 1-24, 2004.
- [14] J. W. Seifert, " A Primer on E-government: Sectors, Stages, Opportunities, and Challenges of Online Governance," 28 JAN 2003.
- [15] A. AL-Shehry, S. Rogerson, N. Fairweather, and M. Prior, "the motivations for change towards E-government adoption: case studies from saudi arabia," *eGovernment Workshop*, 2006 2006.
- [16] S. Sang and J.-D. Lee, "A Conceptual Model of E-government Acceptance in Public Sector," in *Digital Society, 2009. ICDS '09. Third International Conference on*, 2009, pp. 71-76.
- [17] E. Fraga, "Trends in E-government How to Plan, Design, Secure, and Measure E-government," presented at the Government Management Information Sciences (GMIS), Santa Fe, New Mexico, 2002.
- [18] H. Alsaghier, M. Ford, A. Nguyen, and R. Hexel, "Conceptualising Citizen's Trust in E-government: Application of Q Methodology," *Electronic Journal of E-government*, vol. 7, pp. 295-310, 2009.
- [19] A. Gilbert, "President Bush Backs E-government, Digital Signatures" *InformationWeek*, p. 24, 2001.
- [20] A. DeBenedictis, W. Howell, R. Figueroa, and R. A. Boggs, "E-government Defined: An Overview Of The Next Big Information Technology Challenge," in *Issues in Information Systems*, pp. 130-136, 2002
- [21] J. Yonazi, H. Sol, and A. Boonstra, "Exploring Issues Underlying Citizen Adoption of eGovernment Initiatives in Developing Countries: The Case of Tanzania.," *Electronic Journal of E-government*, vol. 8, pp. 176-188, 2010.
- [22] M. Warkentin, D. Gefen, P. A. Pavlou, and G. M. Rose, "Encouraging Citizen Adoption of E-government by Building Trust," *Electronic Markets*, vol. 12, pp. 157-162, 2002.
- [23] H. AlShihi, "E-government Development and Adoption Dilemma: Oman Case Study," in *The 6th International WeB (Working for eBusiness) Conference*, Victoria University, Melbourne, Australia 2005.
- [24] S. AlAwadhi and A. Morris, "The Use of the UTAUT Model in the Adoption of E-government Services in Kuwait," presented at the Proceedings of the 41st Annual Hawaii International Conference on System Sciences, 2008.
- [25] X. Dong, L. Xiong, and W. Wang, "How adoption is G2C model E-government? Evidence from Xi'an and Nan Jing," in *E -Business and E -Government (ICEE), 2011 International Conference on*, 2011, pp. 1-4.
- [26] P. Pavlou, "Integrating Trust in Electronic Commerce with the Technology Acceptance Model: Model Development and Validation," in *Americas Conference on Information Systems 2001*, p. 159.
- [27] D. H. McKnight, V. Choudhury, and C. Kacmar, "Developing and Validating Trust Measures for E-commerce: An Integrative Typology," *Information Systems Research*, vol. 13, pp. 334-359, 2002.
- [28] D. Gefen, E. Karahanna, and D. W. Straub, "Trust and TAM in Online Shopping: An Integrated Model," *MIS Quarterly*, vol. 27, pp. 51-90, 2003.
- [29] S. E. Colesca, "Increasing E-trust: A Solution To Minimize Risk In E-government Adoption," *Journal Of Applied Quantitative Methods*, vol. 4, pp. 31-44, 2009.
- [30] S. C. Srivastava and T. S. H. Teo, "Citizen Trust Development for E-government Adoption: Case of Singapore," in *"Proceedings of Pacific Asia Conference on Information Systems*, 2005, pp. 721-724.
- [31] S. Colesca, "The main factors of on-line trust," *Economia. Seria Management*, vol. 10, pp. 27-37, 2007.

- [32] S. Marche and J. D. McNiven, "E-government and E-governance: The Future Isn't What It Used To Be," *Canadian Journal of Administrative Sciences / Revue Canadienne des Sciences de l'Administration*, vol. 20, pp. 74-86, 2003.
- [33] H. Margetts, "E-government in Britain—A Decade On," *Parliamentary Affairs*, vol. 59, pp. 250-265, 2006.
- [34] J. K. Pinto and S. J. Mantel, Jr., "The causes of project failure," *IEEE Transactions on Engineering Management*, vol. 37, pp. 269-276, 1990.
- [35] V. Venkatesh, M. G. Morris, T. A. Sykes, and P. L. Ackerman, "Individual Reactions to New Technologies in the Workplace: The Role of Gender as a Psychological Construct," *Journal of Applied Social Psychology*, vol. 34, pp. 445-467, 2004.
- [36] R. Titah and H. Barki, "E-government Adoption and Acceptance: A Literature Review," *International Journal of Electronic Government Research (IJEGR)*, vol. 2, pp. 23-57, 2006.
- [37] R. Heeks, *Implementing and managing E-government: An international Text*. London: SAGE Publications Ltd 2006.
- [38] S. AlAwadhi and A. Morris, "Factors Influencing the Adoption of E-government Services," *Journal of Software*, vol. 4, pp. 584-590, 2009.
- [39] D. Mundy and B. Musa, "Towards a Framework for E-government Development in Nigeria," *Electronic Journal of E-government*, vol. 8, pp. 148-166, 2010.
- [40] L. Carter and F. Bélanger, "The utilization of E-government services: citizen trust, innovation and acceptance factors" *Information Systems Journal*, vol. 15, pp. 5-25, 14 JAN 2005.
- [41] F. Bannister and R. Connolly, "Trust and transformational government: A proposed framework for research," *Government Information Quarterly*, vol. 28, pp. 137-147, 2011.
- [42] M. Jones, "Identity & Access Management using Social Networking Technologies," The University of Manchester, Manchester07/04/2011 2011.
- [43] F. Musau, W. Cheruiyot, and J. C. Mushi, "Trust and its Challenges Facing E-government Programs in Kenya," *2011 International Conference on Computer and Management (CAMAN 2011)*, p. 4, 2011.
- [44] S.-L. Pan, C.-W. Tan, and E. T. K. Lim, "Customer relationship management (CRM) in E-government: a relational perspective," *Decision Support Systems*, vol. 42, pp. 237-250, 2006.
- [45] F. Salem, "Exploring E-government Barriers in the Arab States," *Policy Briefs Series, Policy Brief 2, Dubai, Dubai School of Government*, 2006.
- [46] D. Pilling and H. Boeltzig, "Moving toward E-government: effective strategies for increasing access and use of the internet among non-internet users in the U.S. and U.K.," presented at the Proceedings of the 8th annual international conference on Digital government research: bridging disciplines & domains, Philadelphia, Pennsylvania, 2007.
- [47] M. D. Myers and D. Avison, *Qualitative Research in Information Systems: A Reader*. London: Sage, 2002.
- [48] E. H. Schein, *Organizational Culture and Leadership* vol. 3: Jossey-Bass, 2004.
- [49] M. R. Johannessen, "Different Theory, Different Result: Examining how Different theories lead to Different Insights in Government 2.0 Research," in *Proceedings of the 1st Scandinavian Conference of Information Systems and the 33rd Information Systems Research in Scandinavia (IRIS) Seminar*, Skørping, Denmark, 2010.
- [50] B. Medjahed, A. Rezugui, A. Bouguettaya, and M. Ouzzani, "Infrastructure for E-government Web services," *Internet Computing, IEEE*, vol. 7, pp. 58-65, 2003.
- [51] F. Virili and M. Sorrentino, "Value generation in E-government from service-based IT integration," *Transforming Government: People, Process and Policy*, vol. 3, pp. 227-247, 2009.
- [52] Z. Ebrahim and Z. Irani, "E-government adoption: architecture and barriers," *Business Process Management Journal*, vol. 11, pp. 589-611, 2005.
- [53] I. Akman, A. Yazici, A. Mishra, and A. Arifoglu, "E-government: A global view and an empirical evaluation of some attributes of citizens," *Government Information Quarterly*, vol. 22, pp. 239-257, 2005.
- [54] J. I. Criado and M. C. Ramilo, "E-government in practice: An analysis of Web site orientation to the citizens in Spanish municipalities," *International Journal of Public Sector Management*, vol. 16, pp. 191-218, 2003.