

Challenging Development Citizen-Centric E-Governance in Sudan

Rasha Galal Eldin Hassan Mohamed Edrees and Othman O Khalifa²

¹Faculty of Computer Science and Information Technology
Sudan University of Science and Technology

Electrical and Computer Engineering
²International Islamic University Malaysia

Abstract

E-government is a website that provides reliable content based on a strong infrastructure of a digital network, application servers and internet, an extensive database and other supporting services. This paper investigates the awareness of citizen to e-government services in order to engage citizen to use service provided, and analyze the current implementation of how e-government tries to promote their service, hence the behavior can be identified so that information and service can be delivered in more personalized way .

Keywords: *E-government, information society, e-services, e-Payment, e-Procurement, e-User.*

1. Introduction

Currently, we are living in information age, where information is the bridge to the future and the impact of information and information technology in society is increasing. The innovations in ICT, and the striking success of electronic commerce (e-commerce) in the past few years have influenced the public sector. Electronic government (e-government) has become the catchword covering many activities and attempts to innovate and modernize the field of public administration. However, the 21st Century is the time for Technological Revolution, or Information Society. The E-Government applications have emerged rapidly in the developing world. The e-Government has been adopted in many countries in order to make the governmental services better, faster, cheaper, transparent, more efficient, more accountable, and more accessible to their beneficiaries; the citizens and businesses. However, the process of change to e-government may have many promises, it raised new challenges. The impact reflection from Political, Economical, Sociocultural, and the basic infrastructure, human capital has introduced a new obstacles and difficulties. Previously it was difficult to investigate e-government in developing countries such as Sudan due to their low levels of development. However, recent advances in e-government in these countries have made it possible to conduct studies and analyse their experiences

and practices. Although there are many works on e-Government in Sudan [1][2], there is a lack of research based on its practical dimension. Also, the success and acceptance of e-government initiatives depends on citizen willing to utilize the service provided. Therefore, the e-Government has been adopted in order to make the governmental services around the country or the world better, faster, cheaper, more convenient, more transparent, more efficient, more accountable, and more accessible to their beneficiaries; the citizens and businesses.

2. E-Government in Sudan

Sudan E-government initiative started in 1990s, when ICT take great place in Sudan and the National Information Center is assigned as a former body that coordinate e-government in Sudan since 2004 [3], Although e-government Applications has recently emerged in Sudan, the E-government in Sudan implemented to decrease administrative costs, for governments and citizens [4], to design an efficient e-Government system, we need to examine Security experience in e-government Users Awareness, Perceptions and Attitudes, Barriers and challenges to E-Government services adoption, Cultures and Privacy, whoever the internet usage and internet penetration has increasing significantly in Sudan. So, the security has become more critical factor in ensuring information and data privacy and protection [4][5][6]. Getting start in the case study need to explore the current status of Sudan e-government websites and list all electronic citizen services and according to report about implementing e-Gov services in Sudan (2014) presented in a parliament session on 24/11/2014 from ministry of science and communication in Sudan. All government informatics projects in Sudan are controlled by national information center NIC <http://nic.gov.sd>, where all governmental websites are hosted in, the NIC considered as a unit under Ministry of science and technology in Sudan [7][8][9].

3. Data Collection and Analysis

Data were collected using questionnaire and analyzed using SPSS v.16 with 68 variables and 87 observations, observations are freshmen students who use the online admission to universities for the academic year 2014/2015 in Sudan, it's worth to mention that the online admission system is used for the first time in Sudan.

The questionnaire was used for data collection for this research as it is an efficient means to gain data from participant; it is an appropriate and an effective method to investigate people's attitudes and opinions regarding particular issues. In this research, a total 87 Respondents completed the questionnaire, about citizens' awareness, perception, attitude, acceptance, adoption of electronic Government, and security experience in using e-Gov service, it is provided in both Arabic and English languages.

4. Results and Findings

The following construct that the questionnaire is built on it and represent the frequency percentages: Data from questionnaires shows in table1 that most of Respondents are so young; however they are intermitted Internet and computer users. The following analysis in table 1 shows that the users are fairly familiar with e-government, although the only e-Gov service they use is the online Admission for universities, a round 40% thought that e-Gov services has a positive effect on citizens and as expected for 5 years long later it will take a better effect. Fortunately 62.8% confirmed that they are favor e-government as the primary means for obtaining information and services from government, however 37.9% argued its high a priority should be for government to invest tax money in making information and services available over the Internet.

Users Awareness, Perceptions and Attitudes (UAPA)		Percent%	
UAPA1	How familiar you are with "e-government"?	Very familiar	13.8
		Fairly familiar	28.7
		Just somewhat familiar	27.6
		Not at all familiar	17.2
		Not sure	12.6
UAPA2	Overall, what effect would you say e-government is having on the way government operates?	Very positive	19.5
		Somewhat positive	23.0
		Neutral	21.8
		Somewhat negative	10.3
		Very negative	9.2
UAPA3	And, looking ahead three to five years what effect do you think e-government will have on the way that government operates?	Very positive	32.2
		Somewhat positive	27.6
		Neutral	17.2
		Somewhat negative	3.4
		Very negative	6.9
UAPA4	In your view, how high a priority should it be for government to invest tax money in making information and services available over the Internet?	Very high priority	20.7
		High priority	17.2
		Medium priority	26.4
		Low priority	4.6
		Very low priority	13.8
UAPA5	Would you favor or oppose e-government as the primary means for obtaining information and services from government?	Not sure	17.2
		Strongly favor	25.6
		Somewhat favor	37.2
		Somewhat oppose	9.3
		Strongly oppose	8.1
	Not sure	19.8	
	Strongly favor	0	

Table 1

The following information is the valid frequencies percentage through five-point scale with the following anchors: 1- Strongly disagree, 2 Disagree, 3- Neither agrees nor disagrees, 4- Agree, 5- Strongly agree on the survey on to which degree e-government is offering service to citizens and is the basic infrastructure quite enough to develop e-government in Sudan.

Table 2 presents to which degree respondent agree and disagree with e-Government services in Sudan, 69% of Respondents agree with e-Government online services can be effective in providing the Government information to the people, where government of Sudan adopted e-government applications as a solution to facilitate

communication and connectivity between different parts of the government institutions, agencies and citizens, and so 60.7% of Respondents agreed on they can communicate with e-government service provider online to receive the desired information.

62.6% agreed on Internet Services is easily available in their area, and Most of the people have access on the Internet and Computers as 75% agreed on; however the speed of Internet and quality of service is not quite enough to access the e-Government services as 53.6% agreed on if we compare it with the wide usage.

e-Government Development in Sudan		Strongly Disagree	Disagree	Neither Disagree nor agree	Agree	Strongly Agree
ED1	e-Government online services can be effective in providing the Government information to the people	9.5%	9.5%	11.9%	46.4%	22.6%
ED2	People also can communicate with e-government service provider online to receive the desired information	14.3%	4.8%	20.2%	41.7%	19.0%
ED3	Internet Services is easily available in your area.	10.8%	14.5%	12.0%	26.5%	36.1%
ED4	The speed of Internet and quality of service is good enough to access the e-Government services	20.2%	11.9%	14.3%	23.8%	29.8%
ED5	Most of the people have access on the Internet and Computers	11.9%	7.1%	6.0%	22.6%	52.4%

Table 2

Table 3 investigate on barriers and challenges to e-Government services adoption in Sudan where 63% agree on Lack of knowledge about the e government services and Lack of knowledge and ability to use computers and technology efficiently are the most barrier of use e-government in Sudan moreover 57.8 agree on that there is inadequate understanding of advantages of E-Government is another next barrier.

48.1% agree on Lack of users' trust and confidence to use e-government services and around 53.1% agree

on Lack of security and privacy of information in government's websites however less agrees on Lack of policy and regulation for e-usage in Sudan as e-government barriers.

In spite of 54.9% agree on the availability and reliability of internet connection, others 41% agree on insufficient access to internet as another barrier.

Barriers and challenges to E-Government services adoption (BCEA)		Strongly Disagree	Disagree	Neither Disagree nor agree	Agree	Strongly Agree
BCEA1	Inadequate understanding of advantages of E-Government	15.7%	6.0%	20.5%	31.3%	26.5%
BCEA2	Lack of knowledge and ability to use computers and technology efficiently	9.8%	7.3%	18.3%	43.9%	20.7%
BCEA3	Lack of knowledge about the e government	10.0%	5.0%	21.2%	43.8%	20.0%

	services					
BCEA4	Lack of security and privacy of information in government’s websites	21.0%	8.6%	17.3%	32.1%	21.0%
BCEA5	Lack of users’ trust and confidence to use e-government services	11.4%	17.7%	22.8%	25.3%	22.8%
BCEA6	Lack of policy and regulation for e-usage in Sudan	18.5%	12.3%	27.2%	22.2%	19.8%
BCEA7	The availability and reliability of internet connection	13.4%	13.4%	18.3%	32.9%	22.0%
BCEA8	Insufficient access to internet	21.7%	10.8%	26.5%	18.1%	22.9%

Table 3

Table 4 provide a general overview about Sudan Cultures and privacy on the use of current e-government services,

Privacy and personal information:

44.40% feel unsafe to use e-government services

36.40% feel that the risks outweigh the benefits of using e-government services

55.20% feel I must be cautious when using e-government services

45.30% personal information may be used in an unintended way by the governmental agency.

58.20% someone can snatch my personal information while I'm sending the information to a governmental website

57.70% Hackers may be able to intrude governmental websites and steal my personal information stored on the web **Trust**

52.00% believe that there could be negative consequences from using e-government services.

40.30% risky to interact with an e-government service.

59.80% trust e-Government website when it assures me of the security it provides

62.00% trust e-Government website when it usually ensures that transactional information is protected from any accidentally being altered or destroyed during a transmission on the Internet

58.80% trust e-Government website when there is an effective mechanism to address any violation of my personal information

61.30% would use e-Government website when the technologies supported by the system are reliable all the time

67.60% would use e-Government website when the technologies support the system are secure all the time

70.00% would use e-Government website when the legal and technological structures are adequately to protect me from problems on the Internet

60.00% trust e-Government website when it provide a valuable service for me.

Cultures and Privacy (CP)		Strongly Disagree	Disagree	Neither Disagree nor agree	Agree	Strongly Agree
CP1	I feel it is unsafe to use e-government services	20.3%	16.5%	19.0%	20.3%	24.1%
CP2	I feel that the risks outweigh the benefits of using e-government services	16.9%	20.8%	26.0%	22.1%	14.3%
CP3	I feel I must be cautious when using e-government services	16.7%	9.0%	19.2%	30.8%	24.4%
CP4	I believe that there could be negative consequences from using e-government services.	12.0%	16.0%	20.0%	32.0%	20.0%
CP5	It is risky to interact with an e-government service.	13.0%	20.8%	26.0%	23.4%	16.9%
CP6	My personal information may be used in an unintended way by the governmental agency.	10.7%	20.0%	24.0%	24.0%	21.3%
CP7	Someone can snatch my personal information while I'm sending the information to a governmental website	13.9%	10.1%	17.7%	36.7%	21.5%

CP8	Hackers may be able to intrude governmental websites and steal my personal information stored on the web	12.8%	9.0%	20.5%	32.1%	25.6%
CP9	I trust e-Government website when it assures me of the security it provides	7.8%	10.4%	22.1%	31.2%	28.6%
CP10	I trust e-Government website when it usually ensures that transactional information is protected from any accidentally being altered or destroyed during a transmission on the Internet	13.9%	10.1%	13.9%	36.7%	25.3%
CP11	I trust e-Government website when there is an effective mechanism to address any violation of my personal information	10.0%	13.8%	17.5%	28.8%	30.0%
CP12	I would use e-Government website when the technologies supported by the system are reliable all the time	11.2%	8.8%	18.8%	37.5%	23.8%
CP13	I would use e-Government website when the technologies support the system are secure all the time	7.8%	7.8%	16.9%	32.5%	35.1%
CP14	I would use e-Government website when the legal and technological structures are adequately to protect me from problems on the Internet	11.2%	6.2%	12.5%	41.2%	28.8%
CP15	I trust e-Government website when it is provide a valuable service for me	13.8%	7.5%	18.8%	18.8%	41.2%

5. Conclusion & Recommendation:

Citizens are the main goal for any governmental service providers; however the success of this process is not easy and requires a thorough understanding of the needs of citizens trust and system requirements. This paper investigates the awareness of citizen to e-government services in order to engage citizen to use service provided, and analyze the current implementation of how e-government tries to promote their service, hence the behavior can be identified so that information and service can be delivered in more personalized way. E-Government in Sudan in the progress of development with many strengths and opportunities such as sound economic policies, political willingness, robust educational system. However, the implementations were not at a required level when compared to EU countries. It still faces few threats and challenges such as culture, economical, security and

privacy concern. In general, Sudan has invested adequate resources and demonstrated commitment to improve the provision of public services online. Sound policies, clear objectives and strategic planning are factors contributing to e-Government success.

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Rasha Galal Eldin Hassan Mohamed Edrees is a PhD at ¹Faculty of Computer Science and Information Technology Sudan University of Science and Technology, Sudan

Othman Omran Khalifa received his Bachelor’s degree in Electronic Engineering from the Garyounis University, Libya in 1986. He obtained his Master degree in Electronics Science Engineering and PhD in Digital Image Processing from Newcastle University, UK in 1996 and 2000 respectively. He worked in industrial for eight years and he is currently a Professor at the department of Electrical and Computer Engineering, International Islamic University Malaysia. His area of research interest is Communication Systems, Information theory and Coding, Digital image / video processing, coding and Compression. He published more than 300 papers in international journals and Conferences including 11 Books. He granted more 40 Medals in different exhibition. He supervised more than 30 Master and PhD students. He is a SIEEE member, IEEE computer, Image processing and Communication Society member.