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ADDRESS THE CHALLENGES OF IMPLEMENTING ELECTRONIC DOCUMENT SYSTEM IN IRAQ E-GOVERNMENT- TIKRIT CITY AS A CASE STUDY

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ABSTRACT

Storing and archiving information plays a crucial role in any government's strategy of serving its parties. One early step in achieving this goal is to implement a correct electronic document system for e-government agencies, which plays a crucial and important role in storing, processing, and managing data flow in an effective manner. However, this system in Iraq did not see the light so far even it is a strategic objective of e-government. This paper attempts to investigate the technological and human challenges that hinder the implementation of such system to support Iraqi e- government in overriding those challenges and speeding up its initiatives. The paper has utilized a quantitative approach via survey questionnaire from various public and private sectors at Tikrit city in Provence Salah al din to achieve its goal. The results indicate several challenges such as economic, computer illiteracy, technology acceptance, training and lack of series implementation steps by government.

Keywords: *Challenges; Implementation; E-government; EDMS*

1. INTRODUCTION

Governments seek to utilize the ICT to achieve better interaction with citizens, and other government entities, provide high quality services and enhance their delivery in an efficient way [1]. Since e-government is a foundation that utilizes data, information, and documents, it is important to manage these issues through storing, processing, managing their flow in effective manner, and to ensure the availability of information. Therefore, an electronic flexible document management system (EDMS) is needed to increase the efficiency and reduce the operations and duration of government processes [2], [3]. Document management needs several resources such as application, skill/expertise, technology and infrastructure. However, various problems are associated with these resources such as technology obsolescence, people hesitation to learn new technology/method, or acquire new method for keeping data. Briefly, several problems are associated to technology and human-based problem [4]. Iraq government seeks to overcome these problems to gain international acceptance in the ICT community. As storing and archiving documents plays a significance role in governments strategies for serving their recipients, the Iraqi government should develop a standard for electronic record keeping and archiving according to best practice standards, policies and guidelines [5].Based on that, Iraq e-government has formulated a strategic objective to utilize electronic record keeping and archiving standard for government agencies by creating a system to ensure that data captured is recorded and archived in a framework allowing for better access. However, these problems, in addition to the significant effect of other issues Iraq faces such as critical security situation and corruption after the war, still hinder the actual implementation of such initiative [6], which did not see the light so far.

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2. EDMS CONCEPT AND BENEFITS

The EDMS is typically referring to a computerized system that facilitates the creation, capture, organization, storage, retrieval, manipulation and controlled circulation of documents in the electronic format [7]. All document management systems should have the following components [8], [9]:

- Capture and import tools to bring documents into the system.
- Methods for storing and archiving documents.
- Indexing and retrieval tools to locate documents.
- Distribution tools for exporting documents from the system.
- Security to protect documents from unauthorized access

The EDMS aim is not merely to exclude paper based files, but to manage all organizational documents, both computer-generated and paper-based, and various files such as digital audio and video files. Document management can manage millions of documents and retrieve the right one in seconds. It can share documents with colleagues while protecting confidential information. Moreover, it helps to send e-mail and fax files instantly, access documents while traveling, publish documents to CD, DVD or the Web, as appropriate, and assists to back up files and records for disaster recovery [8]. An EDMS helps the organization to achieve more efficient operations by reducing transaction costs, automating processes, improving capacity, minimizing errors, and saving on labor. Last but not least, improving information sharing and retrieval will result in a great improvement in government services to citizens [10].

2.1 EDMS Implementation

EDMS implementation is not an easy task and usually requires considering human, budgetary, and technical issues, however, the benefits offered by EDMS deserve its implementation. The literature lacks to implementation researches on EDMSs in public administration [10]. Most EDMS implementation studies have focused on a certain technical functionality of such system or provided some conceptual proposals [11], while few studies have addressed EDMS implementation success or failure in government context [12],[13]. Many developed countries such as Germany, Australia, and Croatia have utilized EDMS efficiently [13]. Also some developing countries have achieved successful implementation of EDMS such as Korea and Malaysia [14], [7].However, many implementing initiatives of EDMS were failed especially in developing countries. Iraqi e-government project has started in 2003 with Italian government cooperation and this project includes the EDMS application. The e-government implementation did not achieve any significant success due to several significant factors including lack of EDMS implementation in spite of the Italian support [13]. The failure of EDMS implementation stimulates researchers to investigate the factors that affect the success of such initiative. Detailed studies on such factors can be found in [13], [10].

This paper aims to address the challenges related to people and technology that affect the implementation of electronic document management system in Iraq, which can contribute to the literature to fill its gap by such paper.

3. METHODOLOGY

In this paper, we identify the technological and human challenges that affect the EDMS implementation in Iraq. The implementing of electronic document system in Iraq e-government-Tikrit city has faced many challenges in Tikrit city which includes lack of IT facilities available to the government staff, low exposure and use of IT services/function such as email, online shopping, and etc. , and others. Therefore, the The implementing of electronic document system in iraq e-government- Tikrit city may pose a number of problems. To determine these problems, we firstly conducted a survey to various organizations that use the electronic document system. The questionnaires were distributed to collect the required data in order to diagnose the problems and challenges in electronic document system and to define the nature of these problems. The collected data gave a clear understanding about the existing problem and the method on how to address the issue in electronic document system problems with Iraq e-government-Tikrit city.

This paper aims to identify the technological and human challenges that affect the EDMS implementation in Iraq. The methodology followed in this paper adopts a quantitative approach to collect the data through using a structured survey questionnaire conducted with 162 respondents from various public and private sectors at Tikrit city in Provence Salah al din. The questionnaire includes for sections as follows.

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Section 1 presents the demographic information of the respondents. Section 2 determines the level of IT use of the respondents. Section 3 explores the preferred medium by respondents to store contents, while section 4 investigates the respondents' attitudes to adopt electronic method for saving data. The SPSS software package for statistical analysis is used to analyze the data. This study hopes to shed light on the common problems implementing of electronic document system in Iraq e-government-Tikrit city. Figure 1 shows the steps of the methodology.

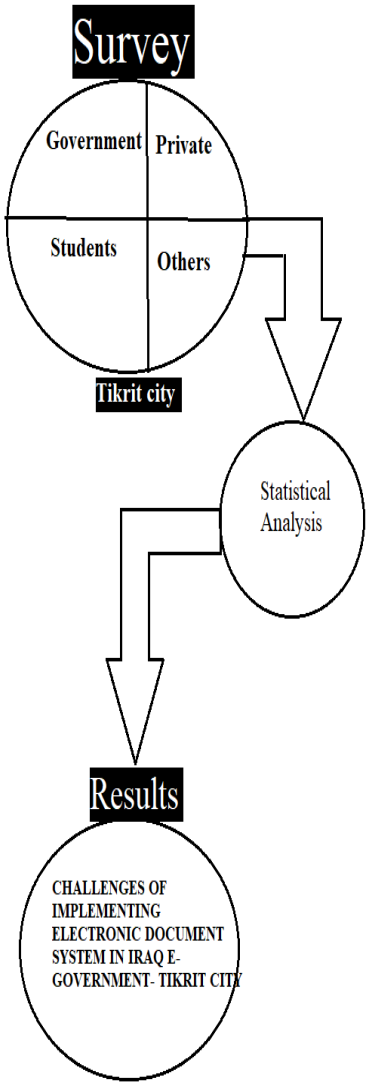

Figure 1 Methodological Framework

4. RESULTS AND ANALYSIS

The first phase of data analysis is the descriptive analyses, which relate to first section of the questionnaire.

4.1 Descriptive Analyses

These analyses involve descriptive analysis for the demographic variable of the respondents as gender, age, The population of this study is a sample of Tikrit city which is (220) from different fields governmental of them (80), response from them (66), private sector is (25) responded from them (17), students are (56) responded from them (37), and others (59) responded from them (42). Income and work as shown in table 1.

Table 1. Descriptive data of respondents

1	Gender	Respondents Number	%
	Male	120	74.1
	Female	42	25.9
2	**Age**		
	Less than 20 years	27	16.7
	21-30years	67	41.4
	31-45years	42	25.9
	More than 40years	26	16
3	**Income**		
	Less than 250000 ID	62	38.3
	250000-500000 ID	62	38.3
	501000-750000 ID	22	13.6
	751000-1000000 ID	14	8.6
	more than 1000000 ID	2	1.2
4	**Work**		
	government	66	40.7
	Private	17	10.5
	Student	37	22.8
	Other	42	25.9

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The demographic analysis indicates, as shown in table 1, that the respondents consisted of 74.1% males and 41.8% female, with an age range from less than 20 to more than 40 years. The largest age group of respondents was between 21 and 30 years old (41.4%) and the smallest age group was more than 40 years old (16%). The analysis also indicates that most respondents have income less than 500000 ID. Moreover, the largest respondent percentage is from government sector (40.7) while the respondents from private sector constitute 10.5%.

4.2 The Level of IT Use of The Respondents

This analysis is related to section 2 of the questionnaire, which aims to determine the level of IT use of the respondents. It includes questions on using computer in office and home and on using the Internet and some services via it.

Table 2: Result of using computer in office

Do you use computer in your office		
Scale	Respondents Number	%
Yes	64	39.8
No	98	60.2

Table 2 reveals that more than half of the respondents 60.2% do not use computer in office while 39.8% use it in office. The study shows the sign that the level of technology exposed in Iraq was low.

Table 3: Result of using computer in home

Do you use computer in your home		
Scale	Respondents Number	%
Yes	80	49.4
No	82	50.6

Table 3 shows that approximately half (50.6%) of the respondents do not use computer in their home while half of them (49.4%) use it in home.

Table 4: Result of using the Internet

Do you use the Internet		
Scale	Respondents Number	%
Yes	82	50.6
No	80	49.4

Based on Table 4, more than half of the respondents (50.6%) use the Internet while the other 49.4% do not use the Internet. The respondents who answered yes with previous question will proceed with the following questions on service via the Internet.

Table 5: Result of conducting services on the Internet

Statement	Respondents Number	%
Have you ever used e-mail to Iraqi e-government?		
Yes	29	17.5
No	53	31.9
Do you use Iraqi e-government web side to get your information?		
Yes	33	19.9
No	49	29.5
Comfortable use email : E-mail		
Yes	74	44.6
No	8	4.8
Comfortable use email : E-government web side		
Yes	59	35.5
No	22	13.3
Get your need or your services from the government via the Internet		
Yes	65	39.2
No	16	9.6

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Based Table 5, majority of the respondents 31.9% never usee email in dealing with government. Therefore, majority of the respondents 29.5% did not use e-govermnet web site to get the informations. Apart from that, most of the respondents who answers these questions used email 44.6%, while similar results indicate that most of the respondents 35.5%. claimed they used e-govermnent website Finally, majority of the respondents 39.2%% claimed they obtained information on services from the Internet.

Table 6: Result of services usage rate

Application	Usage Rate					
	Daily		Weekly		Monthly	
	No.	%	No.	%	No.	%
Email	28	16.9	24	14.5	1	0.6
Messaging	25	15.1	19	11.4	8	4.8
Browser	26	15.7	16	9.6	10	6
Google, Yahoo	23	13.9	20	12	10	6
Facebook	17	10.2	17	10.2	4	2.4
Online Shopping	1	0.6	4	2.4	3	1.8
Online Movies	3	1.8	4	2.4	4	2.4
Online Games	5	3	5	3	4	2.4

Table 7: Result of services usage rate

Application	Usage Rate			
	Yearly		Never Used	
	No.	%	No.	%
Email	21	12.7	92	55.4
Messaging	21	12.7	93	56
Browser	24	14.5	90	54.2
Google, Yahoo	21	12.7	92	55.4
Facebook	20	12	108	65.1
Online Shopping	15	9	143	86.1
Online Movies	14	8.4	141	84.9
Online Games	13	7.8	139	83.7

Based on table 6, 7 results, high percentage of respondents ranging between (54-87%) does not use the applications via the Internet. Email, messaging, browser, google, yahoo, and Facebook are used by respondents but at few rates ranging between (10.2-16.9%) daily and comparable rates weekly, while the other applications are almost rarely used.

As a conclusion almost half of the people do not use computers at office and home and half of other people use the Internet in various moderated rates. The people who use the internet use few applications via it especially the social networking applications and email. Around one third of the people communicate with government web site only to get information on some services or to perform few compulsory services due to government regulations. This indicates several challenges related mainly to economic and to computer and Internet illiteracy.

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4.3 Preferred Medium for Storing Content

Table 8: Preference of medium to hold content

No.	Preference of medium to hold content	Paper		Electronic	
		No.	%	No.	%
1	**Personal information (birth cart, marriage cart)**	24	14.5	16	9.6
2	**Office document process**	19	11.4	30	18.1
3	**Business and shopping procedure**	24	14.5	36	21.7
4	**Document archiving**	22	13.3	19	11.4
5	**Transmission of documents between government and citizen**	18	10.8	24	14.5
6	**Transmission of documents between government institutions**	19	11.4	29	17.5

Table 9: Preference of medium to hold content

No.	Preference of medium to hold content	Both paper & Electronic	
		No.	%
1	Personal information (birth cart, marriage cart)	124	74.7
2	Office document process	115	69.3
3	Business and shopping procedure	102	61.4
4	Document archiving	124	74.7
5	Transmission of documents between government and citizen	122	73.5
6	Transmission of documents between government institutions	116	69.9

Table 8, 9 indicates that high respondents rate (61.4 -74.7%) preferred paper and electronic means for storing personal information, managing office document process, document archiving, and for business and shopping procedure. Also, the respondents prefer both means for managing document transmission between government and both citizens and institutions. Respondent's rate (10.8-14.5%) prefers paper, while (9.6-21.7%) prefers electronic means.

As a conclusion, more than half the people prefer both paper and electronic means to hold the contents. This indicates, in addition to computer illiteracy, that people do not trust electronic means and do not feel comfortable with them due to the society culture, which relied on dealing with and using paper documents for a long time. This needs great government efforts to override this challenge.

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4.4 Willing to Adopt Electronic Means

Table 10: Respondents' attitudes to adopt electronic means

No.						
Statement 1	The government should convert its paper-based files in to digital files					
	Agree		Neutral		Disagree	
	No	%	No	%	No	%
	145	87.3	18	10.8	3	1.8
Statement 2	The cost of converting paper-based file into digital file is too much and not worthy					
	Agree		Neutral		Disagree	
	No	%	No	%	No	%
	75	45.2	60	36.1	31	18.7
Statement 3	The government workforce is ready to change the way of documenting to high level of digital method					
	Agree		Neutral		Disagree	
	No	%	No	%	No	%
	135	81.3	27	16.3	4	2.4
Statement 4	The government workforce is willing to be trained to handle electronic document					
	Agree		Neutral		Disagree	
	No	%	No	%	No	%
	133	80.1	24	14.5	9	5.4

Based on table 10, high government workforce rate (87.3%) agrees that government should convert paper based files to digital files. The table also revealed that (45.2%) of respondents agreed that converting paper-based file into digital file is too costly and not worthy, (36.1%) of respondents stay neutral and 18.7% disagree with this statement. Based on the results, majority of the government workforce, 81.3% is ready to change the way of documenting to high level of digital method. Moreover, most respondents (80.1%) asserted that government workforce should be trained to get knowledge on electronic document.

It can be concluded, the majority of government workforce wish to change the traditional means and use of electronic documents, but with providing training programs that make it easier to use and to deal with such documents. However, the government did not take serious steps to conduct such programs and did not allocate the required budget to convert its paper-based files in to digital files.

5. DISCUSSION

There are basically two main problems identified through the survey. The first problem is the lack of IT facilities available to the government staff. This problem has later contributed to the second main problem which is low exposure and use of IT services/function such as email, online shopping, and etc. A pleasant finding from the questionnaire is that the citizens (respondents) are willing to accept the change into e-government as majority of respondent can accept both the classic and the new approach (electronic). Most of the respondents stated that they prefer to use both methods, while few respondents stated that they prefer to use digital means as medium.

This findings show that a transformation into e-government will not face a big resistance from the respondents/citizen given they are provided with the necessary equipment or facilities such as computer and Internet. Conclusively, the transition from present (where must transaction are paper base) to anew EDMS (where most transaction are electronic base) must be done gradually. This to accommodate some hesitant (which could be fear of technology) and provide smooth and comfortable transformation to highly digital data environment.

6. CONCLUSION

Most EDMS implementation studies have focused on a certain technical functionality of such system or provided some conceptual proposals [11], while few studies have addressed EDMS implementation success or failure in government context [12],[13]. Many developed countries such as Germany, Australia, and Croatia have utilized EDMS efficiently [13]. This paper is one of few papers that addressing the difficulties of implementing the electronic document system, particularly the ones related to technology and human attitudes and acceptance. All the difficulties can be overcome by taking serious and effective steps by government. Even the current security situation of Iraq poses several difficulties, the e-government program should be established and succeed. Iraq government should make e-government accessible to all level of Iraqi with confirmation and guidance to accept the new technology to achieve benefit for all. Upgrading and transforming E-Government system in Iraqi government are suggested to be done in stages which also can give the citizens some times to adapt to the new system. The future work aims to determine the

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current readiness of Iraq e-government to adopt EDMS.

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8. Appendix Paper Questioner

PART A: profile of respondents

Please tick the box which best describes you:

1. age

- ☐ less than 20 years
- ☐ 21-30 years
- ☐ 31-45 years
- ☐ More than 45 years

2. gender

- ☐ male
- ☐ Female

3. income (salary)

- ☐ less than 250000 ID
- ☐ 250000-500000 ID
- ☐ 501000-750000 ID
- ☐ 751000-1000000 ID
- ☐ more than 1000000 ID

4. work

- ☐ government
- ☐ Private
- ☐ Student
- ☐ Other: _____

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PART B: Assess level of IT use

Please tick all relevant boxes

1. Do you use computer in your office or home?

   Office Yes ☐ No ☐ Home Yes ☐ No ☐

2. Do you use internet?

   Yes ☐ No ☐

If you have tick Yes above, please proceed to the next question. Otherwise, jump to part C

3. Tick (x) all application that you have used or are familiar with. If you have tick (x) a box please indicates frequency of use.

	Application	Frequency					
		Daily	Weekly	Monthly	Yearly	When need	Never
i	E-mail						
ii	Messaging						
iii	Search (google,yahoo)						
iv	Browser						
v	Face book						
vi	Online shopping						
vii	Online games						
viii	Online movies						

4. Have you ever used e-mail to iraqi e-government? Yes ☐ No ☐
5. Do you use Iraqi e-government web side to get your information? Yes ☐ No ☐
6. Are you comfortable when you using the following application?

   . E-mail Yes ☐ No ☐ Don't know ☐

   . E-government web side Yes ☐ No ☐ Don't know ☐

   . Get your need or your services from the government via the Internet

   Yes ☐ No ☐ Don't know ☐

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PART C: Preference of medium to hold content.

C1. For the following information, state what is your preferred medium?

	Paper	Electronic	Both	I don't know	others
• Personal information (birth cart, marriage cart)	☐	☐	☐	☐	_____
• Office document process	☐	☐	☐	☐	_____
• Business and shopping procedure	☐	☐	☐	☐	_____
• Document archiving	☐	☐	☐	☐	_____
• Transmission of documents between government and citizen	☐	☐	☐	☐	_____
• Transmission of documents between government institutions	☐	☐	☐	☐	_____
• Shopping bills	☐	☐	☐	☐	_____

C2. Give your comment or suggestion to improve documentation of iraqs gavrnmental agencies.

PART D: Willing to adopt electronic method.

Please tick one most suitable response

1. The government should convert its paper-based files in to digital files.

Strongly agree	Agree	Neutral	Disagree	Strongly disagree
☐	☐	☐	☐	☐

2. The cost of converting paper-based file into digital file is too much and not worthy.

Strongly agree	Agree	Neutral	Disagree	Strongly disagree
☐	☐	☐	☐	☐

3. The government workforce is ready to change the way of documenting to high level of digital method.

Strongly agree	Agree	Neutral	Disagree	Strongly disagree
☐	☐	☐	☐	☐

4. The government workforce is willing to be trained to handle electronic document.

Strongly agree	Agree	Neutral	Disagree	Strongly disagree
☐	☐	☐	☐	☐

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- NAME :
- E – MAIL :

Thank you for your time and participation in this survey. If you wish to know the result of the survey please contacted E-mail:

mohanedthiab@yahoo.com

Muhaned Thiab Mahdee
Master IT student