

E-GOVERNMENT STAGE MODEL: BASED ON CITIZEN-CENTRIC APPROACH IN REGIONAL GOVERNMENT IN DEVELOPING COUNTRIES

Shareef M. Shareef
University of East London
4-6 University Way, East Ham, Greater London E16 2RD, United
Kingdom
s.shareef@uel.ac.uk

Hamid Jahankhani
University of East London
4-6 University Way, East Ham, Greater London E16 2RD, United
Kingdom
h.Jahankhani@uel.ac.uk

Mohammad Dastbaz
Leeds Metropolitan University
City Campus, Leeds, United Kingdom, LS1 3HE
M.Dastbaz@leedsmet.ac.uk

ABSTRACT

E-government systems world are employed all over the world in an attempt to utilize information and communications technology (ICT) to improve government services provided to a range of stakeholders. In employing these systems, governments aim to become more accessible, effective, efficient, and accountable to their citizens. To improve the quality of service delivery to the public, government institutions have to cooperate and manage the shared resources and information flows. The aim of this paper is to analyse one of the established e-government stage models, such as the United Kingdom, and to identify possible opportunities to adopt them for use in the regional governments of developing countries. The study revealed that the analysed model cannot be adopted for use in the Kurdistan Region of Iraq (KRI) due to various critical issues relating to ICT infrastructure, e-readiness, legal framework, cultural attitude, education level, political process, and others.

Keywords: E-Government, Stage Model, KRI, KRG, Critical Issues, Regional Government

1. INTRODUCTION

In the last decade of the 20th century, the world observed rapid development in ICT that exceeded all expectations, and hence vast change in political freedom, economic and global social change. The globalization concept appeared and enlarged dominance of the Internet which exploded due to the advent of the World Wide Web. Within a short period of time, the concept of globalization intersected with the facilities of the Internet, altered the world and brought it into small, global village. The rapid development of Internet and other digital media encouraged practitioners, consultants, and government authorities to employ ICT in public service provision to their citizens. Consequently, a new notion called electronic government (e-government) emerged, referring to the use of Internet and other digital media to deliver information and services to citizens¹. E-government system should change the form to focus on both technology and more on the citizen-centred based approach and perhaps the processes involved in decision making. The technology alone cannot help to develop e-government system, and requires citizen's contribution to reduce the gap between design and reality². E-government is predicted to play a significant role in the delivery of government services and governance in the future, particularly in developing countries. These developments engendered numerous and complex technological, political, societal, economical, and cultural challenges³. These challenges should be considered accordingly as an e-government evolves and moves forward, similar to any other system. As the system changes, the various factors associated with it will change as well. However, recognising and overcoming these challenges is not always simple. It requires research of several aspects to recognise and understand these challenges. The vital approach is the citizen-centric approach and should be taken into consideration to reduce the influence of these challenges. A citizen-centric approach of public service provision will create positive strengthening cycles via cost reduction, motivation, and innovation. Accordingly, different e-government stage models have been recommended and proposed by various experts and organisations, such as the United Nations, World Bank, Gartner, and academic researchers. The most considered e-government models, which are depicted in table 1⁴⁻¹², are similar in their classification of phases or stages. They evolve primarily from a technological perspective, though taking into account some organisational complexity. Most of the models did not recognize the requirement for encouraging and engaging citizens in e-government. They also merely concentrate on the transformation of government services rather than automation of work procedure.

Table 1. The overall differences among some e-government models in literature

Author	Stages	First	Second	Third	Fourth	Fifth
Gartner, 2000	4	Web presence	Interaction	Transaction	Transformation	
UN, 2001-2008	4	Emerging presence	Enhanced	Interactive	Connected	
World Bank, 2002	3	publish	Interact	Transact		
Accenture, 2003	5	Online presence	Basic capability	Service availability	Mature delivery	Service Transformation
Reddick, 2004	2	Cataloguing	Transaction			
Siau & Long, 2005	5	Web presence	Interaction	Transaction	Transformation	E-democracy
Anderson & Henrikson, 2006	4	Cultivation	Extension	Maturity	Revolution	
Mausavi, 2008	5	Cataloguing	Interaction	Communication	Transaction	Integration
Lee, 2010	5	Presenting	Assimilating	Reforming	Morphing	E-governance

Further, various stage models that recognise different e-government procedures might help in this issue. Researches by Darrell and Accenture^{4, 13} have shown that e-government stage models developed at diverse speeds. In other words, the development of e-governments in various countries varies, and some face little progress or even inactivity. The designation of a model that fits with the state's objectives and citizens' desires is vital. Also, important is the understanding of factors that are important to the success or failure of the e-government stage model. Therefore, it is important to select a model based on the country's situation and their objectives, which will be able to assist the organisational processes and provide seamless services to their citizens.

2. WHY ANALYSE THE UK E-GOVERNMENT STAGE MODEL?

Over the last decade, numerous governments around the globe have been implementing e-government initiatives. This implementation differs with respect to range of achievements and complexity due to the increase in financial and political promises. For instance the UK is measured as a well developed country in terms of e-services implementation¹⁴ and is the third developed system in Europe in terms of service provision. This growth is

achieved through a Directgov portal, which offers one-stop services for the public sector. This portal shows an example of the opportunity of utilising an individual fronting for various government institutions, whose sophisticated data structures of workflow processes have been carefully interconnected with each other¹⁵.

In reality, other developed states base their e-government policies on those being employed in the UK¹⁶, due to their readiness for e-government implementation. This study will attempt to find potential uses of the UK model and take lessons from developed models to seek opportunities to adopt the model in the Kurdistan Region of Iraq (KRI) case. In essence, each country has its own strategic plan for e-government, associated with its desires and the involvement processes, which differ significantly. Various states concentrate on creating a correlation between government and businesses by means of establishing interaction and transaction procedures. However, others concentrate on supporting e-democracy through broad participation⁹. According to research by Savvas et al.¹⁷, the main objectives of some countries are to achieve a good return on investment in e-government via an increase in the efficiency of public administration and reductions in operational expenditures. However, others vary in the way they try to achieve their objectives. For example, many countries concentrate on back-office automation, such as Denmark, Spain, France and Italy, while others focus on front-office automation like the Anglo-Irish. In addition, Scandinavian countries, such as Sweden and Finland, are concentrating on democracy and inclusion approaches. However, Denmark seems to concentrate on decreasing operational expenses via e-government initiatives. Concurrently, Scandinavian countries are attempting to perform justice in the region in order to support the decentralising approach of their administration, aspiring at preserving their already high standard.

The fundamental objective of e-government implementation in the UK is to enhance service provision, guaranteeing cost-effectiveness for those services in meeting the needs of public sector. Developing the economy and modernising local government it will be achieved by improving and enhancing the quality of local services to be more transparent, effective and efficient^{18, 19}.

While the study is considering investigating for the opportunities of selecting the best practice e-government stage model for Kurdistan Regional Government (KRG). It is also vital to find out the main objectives of initiating e-government in KRI. The main objectives of the KRG are shown in table 2.

Table 2. The fundamental objectives of the KRG

Order	Objectives
1	Establishing cost-effective, enhanced quality of services provision
2	Transparency in delivery of services, leading to trust in government and reducing the gap between government and citizens.
3	Establishing accountability to reduce corruption
4	Providing equal opportunity to all citizen which leads to social justice
5	Evolverment toward economic development

From the above explanations, it is apparent that the closest system to KRI is the UK system in terms of the objectives of the e-government. The following sections will investigate the opportunity of applying the UK e-government stage model in KRI. However, the next section explains the e-government stage model in the UK.

2.1 The UK E-Government Stage Model

The UK officially launched its e-government initiatives in 2001²⁰. To understand the UK e-government in more detail it is necessary to investigate the e-government stage model. The UK National Audit Office²¹ presented a report to the House of Common, which indicated stages of electronic services initiatives and their implementation. The report illustrates the proposal of a five stage –model—depicted in figure 1—which presents the progression and the steps for service provision from stage one the initial stage to a holistic e-government system. The process of the UK five stages that follows one with each other with difficulty in implementation, attractiveness for citizens, stakeholders and the community, also the levels of complexity of systems which are required. The first stage is a Basic site that the government uses to provide core information regarding various institutions in a variety of different formats for public use. The second stage is Electronic publishing, in which government institutions develop an external portal which will be a vital part of the overall communication strategy. The portal includes thousands of pages and the institutions provide a huge amount of information online, but in a linear mode. The institutions support basic forms for e-mail contacts. However, the external portal is not connected to the institution’s back-office systems.

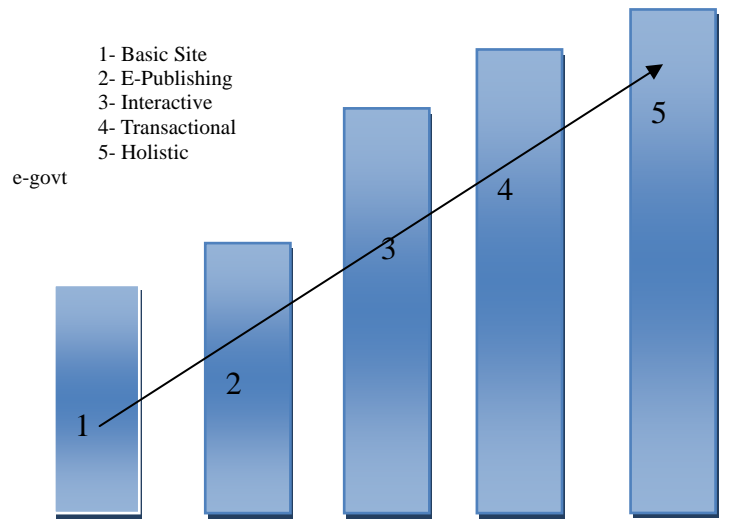


Figure 1. The UK's sketch of E-government stage model (p. 11)²¹

The third stage is the Interactive e-publishing, which connects the institution's portal to some back-office systems. There is also a full or partial intranet in the institution. Availability of effective search tools at this stage enables citizens to identify its address and post code in order to access only local information which can be picked from institutions' database. The fourth stage is the Transactional website, in which users can confirm themselves to the institution and register their identities. Thus, they will be able to complete transactions online, such as making secure payments of fees or taxes. In this stage the portal connected completely to most of the institutions' back-office systems. The downloadable forms are available and can be submitted online at this stage, though there might be stages such as issuing ID numbers or gathering signatures that would be performed through the mail. The final stage is a Joint-up e-governance; this stage is accomplished when a public sector portal can facilitate "one-stop-shop" online services for citizens, and citizens are able to access the central government institutions transparently and across central government institutions as a whole. The integration of government institutions occurs at this stage. They have also potential to connect with other levels of government, particularly regional and local governments. In this context, citizens are able to see their accounts or file and manage the relationships with the institutions entirely through the e-mail or Internet.

3. CURRENT ELECTRONIC SERVICES IN THE UK

One of the key objectives in the UK e-government was to ensure that everyone had access to the Internet by 2005. Another was to make the entire

government services online by 2005²². However, this policy has not been achieved completely²³, and therefore, UK Minister of Cabinet Office Frances Maude replied to Martha Lane Fox's letter that indicates to the point that he will establish a "Ministerial working group on digital reporting to the Cabinet Economic Affairs Committee"²⁴. This work group to enhance the e-government services through "Directgov". Also to make the portal of the UK government simpler and making sure that has an effective power to proceed as the "customer champion with teeth" to improve the consumer experience of digital public services. Directgov is the main official portal designed by the UK government to provide information and services to the public effectively based on "citizen-focused digital channel". More than 10 million visitors access Directgov every month, creating one of the most popular greatest developed website in the UK²⁵. In addition, the UK's new plan in terms of developing ICT infrastructure is to provide opportunity across the country to have access to "super fast broadband" by 2015, with an investment of £830m of public money to upgrade the broadband infrastructure particularly in rural areas²⁶. Thus, provides an opportunity to the whole citizens to utilise Internet with fast speed. Furthermore, a report²⁷ mentioned that in 2009 the speed of broadband was around 3.6Mbps and in some places can get 20Mbps or 50Mbps broadband. Virgin media is working to offer broadband speed of 200 Mbps by 2012. The development of ICT infrastructure is evolving in parallel with promoting and empowering local governments to enhance services to their citizens. In this regard, UK government was encouraging in guaranteeing local governments and their authorities to adjust their portals to meet both the aims to improve quality of services and increase efficiency. Local governments in the UK offer a broad range of services online. Government motivates and helps local authorities raise funds in order to enhance the services and applications more and more. In essence, the annual e-government National Awards Event was awarded superiority across central and local government authorities. For instance, the project (Self Assessment Online Service) carried out by Her Majesty's Revenue and Customs (HMRC), deduced that by end of the January 2009 "... 5.8 million online returns were filed online, an unprecedented 52% increase compared to 2007-08. It achieved overwhelmingly positive customer feedback, and delivered efficiency savings of £20 million" [p 10]²⁸, and the key objective of the project was when 73% of all self assessment returns submitted should be online in 2012. In this regard, the former Prime Minister Gordon Brown also noted in the same event that the government will invest £30m in an effort to get an additional one million people online by 2012 in support of the effort to increase the quality of service provision. Despite these efforts, Margaret Hodge, chair of the Public Accounts Committee and a minister of children in 2003, mentioned to the audience at the Institute of Government that "The civil service still fails to recruit

sufficient people with the appropriate skills to manage public services in the modern world – like effective project managers and qualified IT specialists”...²⁹. In order to manage public services, for instance, effective project managers and sufficient IT specialists are essential. Currently, the UK’s central government portal illustrates the provision of many services to the public (see www.directgov.uk). The UK’s national portal was one of ranked third among European countries according to a 2010 survey¹². Approximately 50% of services are at an advanced stage, such as road tax payment, other tax payment, passport application, and others. However, 42% of the e-government services are at a Transactional Web site stage such as; driving license, student loan services, and others. Seventy-five percent of services can be accessed online, such as job-seeker allowance, housing benefits, and others. Ninety percent of the information and services are available on the website, such as birth and marriage certificates, travel information, living abroad and, others¹². The summary of the entire services available on the UK portal is illustrated in figure 2.

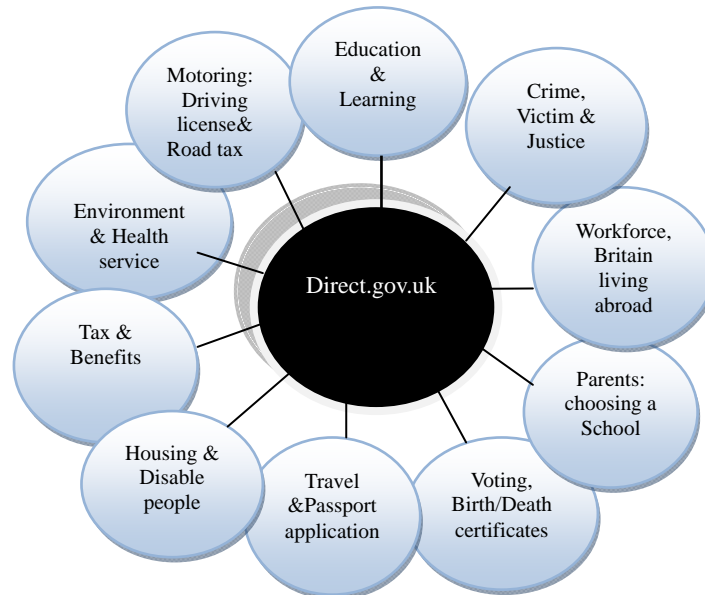


Figure 2. Electronic services on the UK’s portal

4. CRITICAL FACTORS AFFECT THE ADOPTION OF THE UK STAGE MODEL IN KRI

In the following section, the authors look to see if the UK stage model can be applied to KRI. In order to test this, the authors will be examining the following critical issues as identified in the literature.

4.1 ICT Infrastructure in KRI as Compared to the UK

The personal computer started in 1970's and linked via Internet in 1980's. Technological and human resources are one of the fundamental needs of e-government initiatives and must be compatible with the e-government initiative. Due to the reality that e-government depends strongly on ICT, a proper and coherent ICT infrastructure for any institution will be one of the key success factors of e-government implementation. The lack of ICT infrastructure and the heterogeneous nature of technologies will increase the digital divide. In the last decade, we have recognized a swift range of Internet penetration in the world. However, Internet access varies among countries in terms of how fast they adopt new technology and how far they are behind. Therefore, it is essential to investigate the impact of the ICT infrastructure on e-government implementation in developed and developing countries. The UK e-government system has a developed ICT infrastructure in establishing the Internet accessibility for every stakeholder across the country with "*super fast broadband*" by 2015. Investment of £830m of public money to upgrade the broadband infrastructure particularly in rural areas²⁶ consequently provides an opportunity to the entire citizens to use Internet with appropriate speed. The contribution of private sector in supporting and developing ICT infrastructure in the country, such as Virgin Media's attempts to offer broadband speed of 200 Mbps by 2012 and to provide a fiber optic network to the UK government as part of their "*Public Sector Network*" (PSN), an agreement signed with the UK government. However, most of the government institutions in the Kurdistan region have a separate ICT department that is responsible for all their IT needs. There is almost no use of ICT in the interaction of the government with public, and in the case of the municipalities in Kurdistan, ICT use is very close to null, due to lack of IT skills by employees and managers. Slight efforts by KRG institutions to develop ICT infrastructure attempt to connect certain government institution via fiber optic. Most of the institutions in the KRG are equipped with computers and Internet access. While, the ICT infrastructure in KRG is still under expectation due to lack of efficiency of the Internet in terms of speed, cost, and accessibility. Internet connectivity in all government institutions is only for head of departments and managers not for ordinary employees. Shortages in telephone land lines, particularly in rural areas, will also impact the usability of the Internet. Lack of electricity or unreliable electricity in which the government provides electricity only around 20 hours per a day including private power generators to their citizen (see www.krgelectric.org) also influences the implementation of e-government system in Even though, the availability of some mobile communication company might help in initiating e-government system. However, the lack of competition amongst companies

due to the limited number of these companies impacts negatively in implementing e-government system.

4.2 E-readiness of Electronic Technology in KRI as Compared to the UK

E-readiness is the capability to utilize ICT to evolve businesses and other aspects, there are various benchmarking indexes performed by (UNDP, World Bank, and Economist Intelligence Unit). However, the key issue facing the researchers, especially in Iraq, is data collection, due to unavailability of latest population statistic census in Iraq since 1977. Currently there are debates amongst Iraqi politicians regarding a statistical census of the entire country. However, some parts of the country and their representatives do not want to carry out this important process. Therefore, it is difficult to obtain accurate data and information from Iraqi sources. If we compare the UK with KRI in terms of e-readiness, we can observe that the UK is one of the developed countries in the world and ranks fourth in e-government development¹². However in terms of KRI, we can predict a wide gap between the UK and Iraq in general and KRI in particular. According to the UN e-government report in 2010, Iraq lags behind in e-readiness and the survey revealed that Iraq is ranked 136. Table 3 shows the e-government readiness index of Iraq and some other developed and developing countries.

Table 3. E-government readiness for some countries and others [p.71]¹²

Country	E-government Index Value	E-government development ranking
Republic of Korea	0.8785	1
United States	0.8510	2
Canada	0.8448	3
United Kingdom	0.8147	4
Netherlands	0.8097	5
Bahrain	0.7363	13
United Arab Emirates	0.5349	49
Kuwait	0.5290	50
Jordan	0.5278	51
Saudi Arabia	0.5142	58
Qatar	0.4928	62
Turkey	0.4780	69
Oman	0.4576	82
Islamic Republic of Iran	0.4234	102
Syrian Arab Republic	0.3103	133
Iraq	0.2996	136
Yemen	0.2154	164

Therefore, it is essential for the Iraqi government in general and the Kurdistan region in particular to investigate and establish an efficient e-government system to enhance the public service in order decrease corruption.

4.3 Legal Framework Differences

Government operations are robustly regulated and driven by policy and legal frameworks that comprise local constitutional law and other relevant laws, rules, and regulations. The main concern is required to understand and realise the profits that can be achieved by enabling e-government system. Laws and legislation, procedures and systems outwards towards the public are not only acting for the sake of technological change. To manage an efficient service delivery in the electronic environment, legal framework and legislation are essential. The UK parliament has enacted legislation regarding accessibility, the “*Freedom of Information Act 2000*,” which indicates to the laws regarding the citizen’s rights in accessing information held by public sector³⁰. Legislation came to force in the UK and other European countries such as; “*Data Protection Act 1998, Electronic Signatures Regulations 2002, Electronic Communications Act 2000, Electronic Commerce Regulations 2002, The UK Public Disclosure Act 1990, Data Protection Act 1998, Computer Misuse act 1990, reuse of Public Sector Information Regulations 2005*” and, others³¹. One of the UK’s strategies of e-government is “*a strategic framework for public services in the information age, April 2000*”³¹. Legal framework establishment will support government services for the public, and will help overcome the obstacles of data protection and other legal issues. However, in KRI there is no such legislation offered to citizens to access the government’s information. Data protection, citizens’ right protection, copyright, computer misuse and others rules and regulations do not yet exist in the region. There is no effort to propose any legislation relevant to data protection or legal framework for e-government initiatives. Only some laws and legislations were enacted by Kurdistan parliament, such as Investment Law in KRI in 2006, the Smoking Prohibition Law in 2007, and the oil and gas law in 2007 (see [www. Krg.org](http://www.Krg.org)). Enacting the required legal framework needed in Kurdistan to support the usage of new technology and introducing standards and legislation which ensure interoperability, compatibility and secure sharing of information.

4.4 Cultural Attitude Differences

Cultural attitude affects e-government initiatives in various aspects such as the equality and inequality of people (men & women) in the community and the potential risk of the people in the society. Cultural

attitudes have been broadly involved in the information system (IS) field over the past decades on the influence of cultural variety on the evolvement and use of ICT^{20, 32}. According to the literature, a variety of studies insist that apart from ICT infrastructure and legal framework, cultural attitude intended to the expression of differences in Internet dissemination among countries¹. In some societies, the desire of Internet is not the issue compared to other priorities, such as food, water, electricity, education, and health, particularly in developing countries, such as Iraq. The priority issue in Iraq in general and Kurdistan in particular is their security, electricity, food and welfare life. Citizens are not supportive of internet availability, only some people especially young they do concern about Internet availability along with some academic researchers. Therefore, it can be seen in developed countries such as UK that the use of the Internet is much higher than in developing countries such as Iraq. According to the survey carried out in KRI in 2010³³, one of the obstacles that influence the usability of the internet is gender which has an impact on average daily time spent on the use of the Internet. In other words, males use the Internet more than females, due to some families' negative perspective towards Internet.

4.5 Education Level Differences

Developed countries and a few developing countries have now shifted their government procedures into e-enabled form, much as in the UK. The skilled human resources have severe impact on e-government implementation. For instance, in KRI, the human resources in terms of IT literacy are inefficient and require quick and rigorous concentration, and actions must be taken by the government to decrease digital divide. Broadened investment in the education sector and digital skill forms are vital measures to prevent citizens from being excluded from the knowledge society and reduce the digital divide particularly in the Kurdistan region. According to the Digital Opportunity index³⁴ the UK is at the top 10 in digital opportunity. This is due to the high comfort level with using internet amongst ordinary people. In the UK there are various organisations in helping and supporting ICT skills and training for the private and public sector such as “*Skill Set*”. The emergence of ICT in education curriculum is the main factor in reducing the digital divide where the ICT in education curriculum is considered in the UK. However, in KRI, the plan for an e-government initiative is weak and does not seem to have engaged the responsible bodies for educating and training required human resources in this sector. There is a slight attempt to do this through the IT academy, which was launched in 2009 in order to train government staffs to utilise Microsoft Office as an initial stage. This academy centre is carrying out its operation only in the capital city not across the country, and this centre alone

would not be able to achieve the public desires. Government should consider effective steps to overcome the digital divide issue by expanding the IT academy across the country. That will considerably enhance to develop knowledge society and bridge digital divide³⁵.

4.6 Political Process Differences

The interference issue of politicians in public administrations is another key point that influences e-government initiative in developed and developing countries. Any state led by a set of laws that takes seriously the issues of transparency, human rights and accountability will be a successful country. UK is one of the most liberal and democratic countries in the world that creates an environment that makes citizens feel free and participate in political process and governmental organisations. The UK politicians cooperated with central government to make a coherent support for their local governments²⁰ to establish decentralised authority. Iraq is a politically and economically unstable country due to lack of acceptance amongst the main three parts in Iraq such as Shea, Kurds and Sunni parts. The relationship between the federal government and KRG is distrustful and uncooperative, due to some destabilise parts of the country such as Kirkuk. Kurds want to bring city of Kirkuk back to their original Kurdistan region while others not. Despite, there is an article called “*Article 140*” which was constructed according to the Iraqi constitution to solve Kirkuk issue. However, the entire Iraqi prime ministers since 2003 did not implement all the elements of article 40 accurately with their allocated time³⁶. In terms of financial there is always problem regarding Kurdistan’s annual budget between region and federal government. Those problems might negatively impact the implementation of any strategic project such as e-government system. In addition, in Kurdistan, politicians are interfering public services, businesses, and governmental administrations by allocating unreliable persons in the accurate position due to their loyalty of its political party³³. Politicians should support public body, civil servants and, other governmental administrations. According to the Corruption Perception Index (PCI) report shows that Iraq ranked 175 in the world³⁷. Public services should be separated from politics, and give opportunity to civil servants to reach their potential. Therefore, government should plan a strategic policy to achieve the aims and objectives of the presumed strategy in order to establish a coherent system, with support from politicians. Due to the above differences, it is necessary to consider a set of different aspects of enhanced delivery of services. The argument here is that, while the UK’s e-government cannot simply be cultivated in KRI, ICT might not be a big issue. It should consider other challenges as we mentioned above. Therefore, it is essential to find alternative ways, compatible with the state’s situation

and its objectives.

5. PROPOSED E-GOVERNMENT STAGE MODEL

The findings of the above investigation revealed that the UK government model cannot be applied to KRI, due to the broad gap in the issues that explained above between UK and KRI. Therefore, the model aims to add all the key strength points and issues identified in the above investigation and should be taken into consideration. For instance, government should create a transparent, competitive environment for various telecommunication companies to provide services to the public at a reasonable price, with good quality and ease of accessibility. The availability of legal framework, laws, and legislation to establish a coherent system and supported by politicians also meet citizens desires to protect the public's privacy. Deploy the IT literacy in education curriculums in schools, and offer IT skills training for government employees and citizens in order to reduce the digital divide. In addition, public awareness campaigns are vital to encourage citizens to learn the benefit of Internet access and will increase the usability of services. Government should also allocate a reasonable fiscal budget to implement an e-government system. Establishing multi-channel delivery of services assists stakeholders benefit from government services³³. Furthermore, the proposed model is expected to cover all of the above mentioned factors, and the other, better visions of e-government models outlined in literature. The key difference of this model from the others is that the proposed model is based on both technological and public perspective, but mainly focuses on the citizen's perspective. In each stage, government plans a strategic roadmap, technical procedure, and financial and security procedures. The first concept is the road map, in which the e-government administrator identifies the opportunities to design a suitable pave way for every change and development. The second concept is technological opportunity, in which new technology is updated and installed and applications are based on development. The third concept is the security, in which checks the system continuously in order to protect the network from any unauthorised access also secure the system to protect citizens' data and information and hence builds a vigorous security. In the last concept, which is the financial portion, e-government administrator allocates financial resources for each stage to build a sufficient system and be able to move forward and cover any suspicious event during implementation of each stage. The most significant challenge in this model occurs mainly in two stages that are different from other e-government stage models, namely the initial and enhancement stage. These two stages are very important of which has not been considered intensively by any of the international organizations, consulting companies, and individual academic

researchers. The other four stages are modified based on the e-government models in the literature along with the KRG objectives, state’s reality and citizens’ desires. The sketch of a proposed six stages e-government model is illustrated in figure 3.

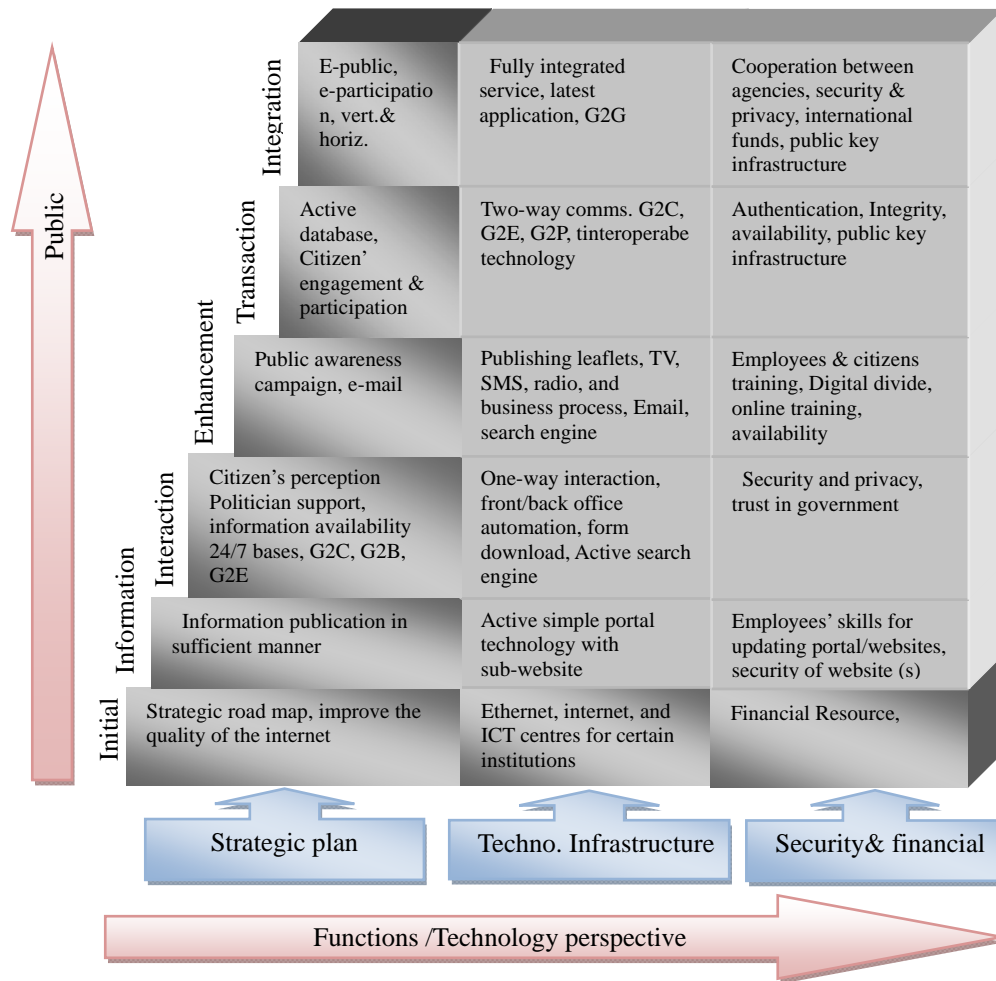


Figure 3. E-government stage model

6. CONCLUSIONS AND FUTURE WORK

E-government systems aim to improve government services provided to stakeholders in order to achieve improved accessibility, effectiveness, efficiency, and accountability. Despite the large numbers of researchers focused on e-government in developed and developing countries, only a small number of them have attempted to explore e-government initiatives at regional level in developing countries. The main purpose of this paper was to analyse a successfully implemented e-government stage model such as

the one utilized by the United Kingdom, and explore the potential of adopting the UK model for use in the KRI. The work revealed that the UK's e-government stage model is not the appropriate model for this case, due to various factors relating to governmental organisation, technological infrastructure and citizen perception and culture. Therefore, the authors proposed that a stage model can be implemented by regional government in developing countries. To check and test the model, the future work will focus on evaluating the proposed e-government stage model using SWOT-AHP analysis method.

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