ICIT 2015 The 7th International Conference on Information Technology
doi:10.15849/icit.2015.0062

NOVEL REVIEW OF ELECTRONIC GOVERNMENT STAGES AMONG DIFFERENT CONTINENTS

Munadil K. Faaeq
Department of Banking and Financial Science
College of Administrative and Financial Sciences
Cihan University
Erbil – Iraq
Monadelaa@yahoo.com

Alaa K Faieq
Baghdad Collage of Economic Sciences University
Baghdad – Iraq
alaa_dijun@yahoo.com

Mohammad M. Rasheed
IT Directorate
Ministry of Science and Technology
Baghdad - Iraq
mohmadmhr@yahoo.com

Thabit Hassan Thabit
Accounting Department
Cihan University
Erbil - Iraq
Thabit.acc@gmail.com

***Abstract*—This research explains Electronic Government (EG) stages around the world. Nowadays, there is in need for particular form to classify EG project stage in each country. EG project each country reaches a particular stage. These countries are trying to develop and enhance EG project by the available sources. The main objective is to systematic review of EG stages among many countries around the world. The finding of the current research is novel review of EG stage. In other words, this research review a significant and sophisticated EG stage among beneficiaries as following; (i)Readiness Stage, (ii)Initiative stage, (iii)Adoption Stage, (iv)Implementation stage, (v) and Developing and benchmark stage. Lastly, the findings will help governments spicily policy and strategic makers and practitioners to useful from the other countries experience and knows they current position.**

***Keywords* :EG Stages, EG models, EG Services.**

doi:10.15849/icit.2015.0062

I. INTRODUCTION

Highlight Initially, Government is a public organization. It is an important part of broader governance systems. Itis public agencies, set up by a society to help the beneficiaries getting the needed services and the information. This includes linking the society's development, related demands, and needs, then trying to collect them and implementing the right solutions to be more useful. Transparency is a necessary condition for government's responsibility vis-à-vis an oversight body [1].Electronic-Government, or (EG), is a modern government that employs technology to transform and view its internal and external relationships. By applying the electronic technology in its operations, a government does not need to change its functions or its obligation to be useful, legitimate, transparent and responsible. In any case, these applications for the government willincreasethe expectations of its society about the performance of the government, in all regards, to a much higher level.In Middle East in general, there are scarcity of studies.

II. EG ADVANTAGES

There are many advantages that can be obtained from using EG. The important advantage of an EG is the increasing of the value of efficiency for the current systems. That will aid to save money and time for both the government and its beneficiaries. Furthermore, the EG facilitates the communication between governments and businesses. For example ,E-Procurement facilitates Government-to-Government communication; this example will permit smaller business to compete government agencies contracts as well as larger business. This will have the advantage of creating an open Electronic-Market and this E-Market will support the business to publish the business in the World Wide Web. In same time business and citizens can get information at a faster speed and it is possible at any time.
In addition, which, when government used the electronic system will reduce the number of manpower. Truly, this would permit the process to be handled by lesser manpower and also to reduce the operations cost and time also[4].

III. EG SERVICES TYPES

The government provides services to many sides (beneficiaries) as following:

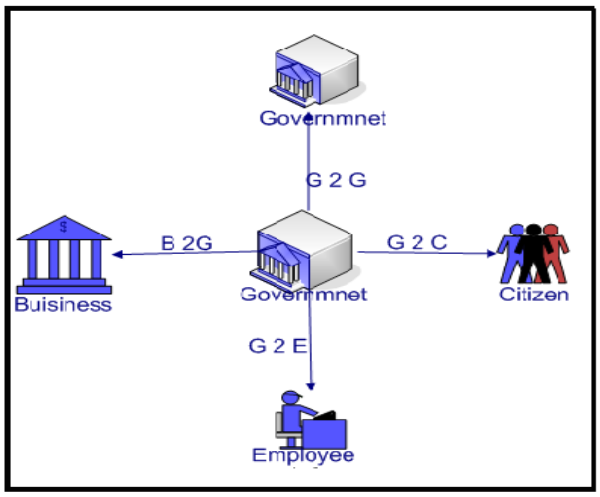

Fig 1.EG services types

- **Government to Citizen (G 2 C):**provide data and services from government agencies to citizen, including static document content and transactional systems such as tax payments, information inquiries, vehicle registration, permit processing, healthcare claims and services, social services delivery [5] increased the transparency leading and easy access to the government information that available at government website [6].

- **Government to Employees (G 2 E):** Provide streamlined services to government employees, including e-travel, e-training, expense reporting and reimbursement [5].

- **Government to Government(G 2 G):** Share data and transaction with other government organizations (agencies) to increase operational efficiencies, including grant management, loan processing, tax payment, processing, grant management [5].

- **Government to Business (G 2 B):** E-Procurement, applied in some countries like USA, Chile, Singapore and India, that aides to increase the doing of business with government [6]. Furthermore, it provides portal access to interoperate with businesses outside the agency, including purchasing portal, loan processing, and tax collection and processing [5].

doi:10.15849/icit.2015.0062

IV. EG STAGES

EG started in July 2001 when the president of USA decided to start a strategy to come up with EG. Generally, EG around the world is trying to growing to be ready to face the challenges in developing, under developing and developed nations [5]. Figure 2 shows EG stages during the developing stage around the world during the period of time.

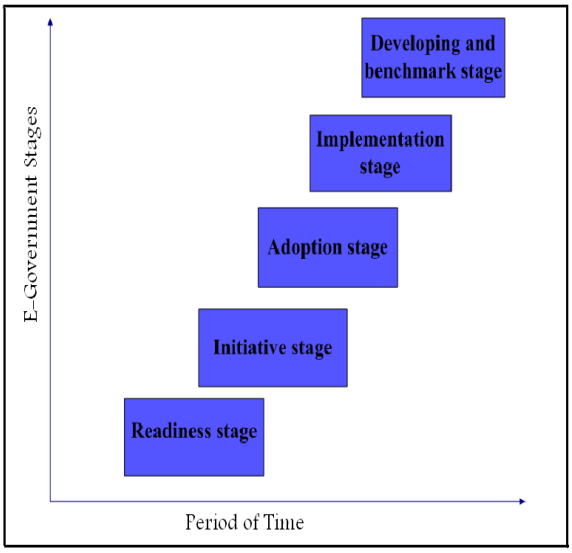

Fig 2. EG project stages.

A. Readiness Stage

Readiness is the first stage and the basic of lunching EG around the world. This can be seen in Figure 2.

Actually, E-Readiness means build electronic infrastructure. At the same time, it should be integrated with what the country has from ICT's dealing with business communication as e-business, current ICT, government (EG) in the country, and nation too. A very strong basic of communication, both inside and outside the country, aidesthe trade and global investment (Harvard Business School). E-Ready is means that uses a computer in various places (schools, business, and government).

It means the use of a computer devise and get benefit from this technology in government, business, and school (McConnel International) [6]. Alsohybe, (2007) presents the readiness stage in some countries and focuses on Yamane. He used survey and interview to get an overview of the EG readiness in Yamane [7].

In fact, EG is a new government process via internet to increase the benefit from the business sector. In this case, the innovation diffusion theory could be implemented and used [7].

Moreover, The government of Yemen is seeking an EG model that can aide in the implementation (as a advance stage) of EG and help the communication between the government and the stockholders in a short period[7].

The United Nations Global EG survey viewed that EG evolution must track national development, identify the difference in access and usetechnology, move on the waytoinclude theinformation of a society, and aid international comparisons [9]. Moreover the U.N. global survey aimed to examine governments' readiness to use EG application to improve and enhance the services thatare presented to citizens. The survey contributed to the development efforts of the member situation by focusing on whether EG impacts the socioeconomic support of the citizen lives. The survey provides a benchmark of a country's state of E-Readiness (a country's preparedness to integrate technology into society). The main goal of the survey were to provide and support an appraisal of the use of EG application to deliver and transport social services and to provide and give the comparative assessment of the readiness and ability of governments to engage citizens in e-Participation.

The U.N. Global EG Survey (2003) in Table 1showed the ranking of E-Readiness for some countries in the world regarding.

TABLE 1: GLOBAL EG READINESS RANKINGS 2003: TOP 23COUNTRIES [1]:

Country	**Country**
1. United States	13. Republic of Korea
2. Sweden	14. New Zealand
3. Australia	15. Iceland
4. Denmark	16. Estonia
5. United Kingdom	17. Ireland
6. Canada	18. Japan
7. Norway	19. France
8. Switzerland	20. Italy
9. Germany	21. Austria
10. Finland	22. Chile
11. Netherlands	23. Belgium
12. Singapore	

The report published by UN in 2005 mentions the transferring of EG to Electronic-Inclusion .Until now, Readiness is linked to the capability of three economic points' agents: individuals, firms, and government to capitalize on the use of ICT. In these days, the government performance can be measured by information system. Furthermore, the interesting perspective concentrated upon the interactions surrounded by ICT, individuals and

doi:10.15849/icit.2015.0062

groups. In this side, the organizational and information system readiness, which mentions the implementation hiatus and transitional aid the correspondingly in Chau's research (1996), impact of user acceptance. Organizational Contingency Theories (OCT). However, it can provide some implications [10].

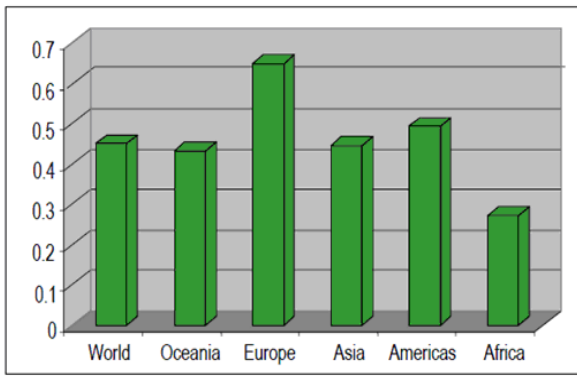

Fig 3. Region Average of EG readiness[11].

According to above discussion, there were many differences between those very important regions in terms of EG readiness, as following:- Europe regions (0.6490) having a clear improvement over the other regions, America got the second post (0.4936), followed Asia (0.4470), then Oceania (0.4338) and Africa (0.2739). Asia and Oceania were slimly below the world rate (0.4514), while Africa runs quite behind. Sweden got (0.9157) better than United States as the first region at that ranking. The Scandinavian countries group got the first three seats in the 2008 Survey, but Denmark (0.9134) took the second place and Norway (0.8921) third place. The United States (0.8644) reach the fourth place. At the ranking for the EG, European countries group got up 70% of the first 35 countries group at the same time the Asian countries group took 20 % of the first 35 countries. The infrastructure and connectivity has been investment got smile rate of failure in European countries group, quite especially in broadband infrastructure .It is important to report that is no one of country from African, Caribbean, Center or North American and Asia previously respectively took any seat at the top 35 countries at the 2008 E-Readiness ranking.

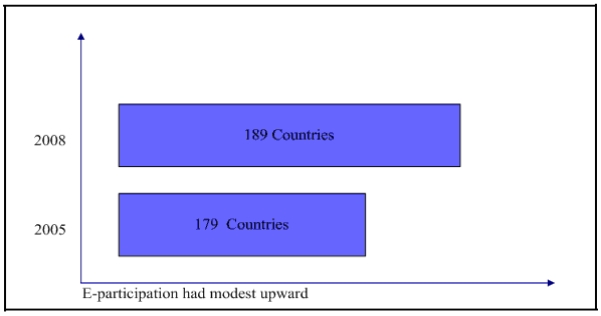

Fig 4. The E-Participation had modest upward from 179 countries in 2005 to 198 countries in 2008.

However, the US took the top place on the e-participation index. This was initially due to its effectiveness in e-information and also e-consultation, which aid its citizens to be more interesting toward government. It was directly followed during the Republic of Korea (0.9773), which performed truly fine in the e-consultation estimation. Denmark (0.9318) and France (0.9318) were took the third place[11].

TABLE 2.TOP 35COUNTRIES IN THE 2008 EG READINESS[11].

Rank	Country	Rank	Country
1	Sweden	18	New Zealand
2	Denmark	19	Ireland
3	Norway	20	Spain
4	United States	21	Iceland
5	Netherlands	22	Germany
6	Republic of Korea	23	Singapore
7	Canada	24	Belgium
8	Australia	25	Czech Republic
9	France	26	Slovenia
10	United Kingdom	27	Italy
11	Japan	28	Lithuania
12	Switzerland	29	Malta
13	Estonia	30	Hungary
14	Luxembourg	31	Portugal
15	Finland	32	United Arab Emirates
16	Austria	33	Poland
17	Israel	34	Malaysia
		35	Cyprus

According to the Table 2 there are first 35 countries which were listed among readiness stage in the whole world.

TABLE 3: REGIONAL EG READINESS RANKING[11].

Region	2008	2005	Region	2008	2005
Africa			Americas		
Central Africa	0.2530	0.2397	Caribbean	0.4480	0.4282
Eastern Africa	0.2879	0.2836	Central America	0.4604	0.4255
Northern Africa	0.3403	0.3098	North America	0.8408	0.8744
Southern Africa	0.3893	0.3886	South America	0.5072	0.4901
West Africa	0.2110	0.1930			
Asia			Europe		
Central Asia	0.3881	0.4173	Eastern Europe	0.5689	0.5556
Eastern Asia	0.6443	0.6392	Northern Europe	0.7721	0.7751
Southern Asia	0.3395	0.3126	Southern Europe	0.5642	0.4654
South-Eastern Asia	0.4290	0.4388	Western Europe	0.7329	0.6248
Western Asia	0.4857	0.4384			
Oceania	0.4338	0.2888			
World Average	0.4514	0.4267			

doi:10.15849/icit.2015.0062

In this report, the survey helps to develop the member's countries during focusing on socio-economic up life and how these factors influence EG. This survey highlights the country's state about the E-Readiness level[14].

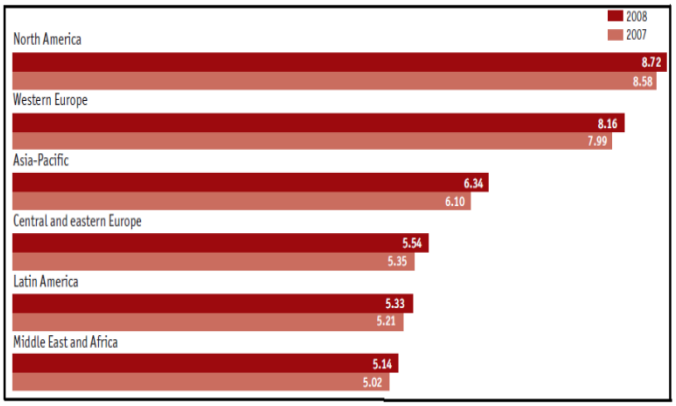

Fig. 3: The six world region scores for Economist Intelligence Unit-Readiness rankings, 2008.

According to the Figure 3,there are six major regions in the world. As the figure shows, there are big differences between them. At the same time, there is difference in the same region under a short period of time (two years). That means the regions pushes up itself to be better. Also, there are differences in that scour as the figure mentions it. At Table 4 shows the compare E-Readiness ranking from 2007 to 2008 for first 70 countries round the world, the first ten countries in 2008 are as following sequence: United States, Hong Kong, Sweden, Australia, Denmark, Singapore, Netherlands, United Kingdom, Switzerland and Austria. Furthermore there are 4 Arabic countries that occupy deferent position as: United Arab Emirates, Saudi Arabia, Jordan, and Egypt. The reasons behind shifting many countries return to policy and communication network.

TABLE 4. ECONOMIST INTELLIGENCE UNIT E-READINESS RANKINGS, 2008 [13].

Economist Intelligence Unit e-readiness rankings, 2008

2008 e-readiness rank (of 70)	2007 rank	Country	2008 e-readiness score (of 10)	2007 score	2008 e-readiness rank (of 70)	2007 rank	Country	2008 e-readiness score (of 10)	2007 score
1	2	United States	8.95	8.85	36	39	Slovakia	6.06	5.84
2	4	Hong Kong	8.91	8.72	37	37	Latvia	6.03	5.88
3	2	Sweden	8.85	8.85	38	41	Lithuania	6.03	5.78
4	9	Australia	8.83	8.46	39	35	South Africa	5.95	6.10
5	1	Denmark	8.83	8.88	40	38	Mexico	5.88	5.86
6	6	Singapore	8.74	8.60	41	40	Poland	5.83	5.80
7	8	Netherlands	8.74	8.50	42	43	Brazil	5.65	5.45
8	7	United Kingdom	8.68	8.59	43	42	Turkey	5.64	5.61
9	5	Switzerland	8.67	8.61	44	44	Argentina	5.56	5.40
10	11	Austria	8.63	8.39	45	45	Romania	5.46	5.32
11	12	Norway	8.60	8.35	46	46	Saudi Arabia	5.23	5.05
12	13	Canada	8.49	8.30	47	49	Thailand	5.22	4.91
13	10	Finland	8.42	8.43	48	48	Bulgaria	5.19	5.01
14	19	Germany	8.39	8.00	49	46	Jamaica	5.17	5.05
15	16	South Korea	8.34	8.08	50	—	Trinidad & Tobago*	5.07	—
16	14	New Zealand	8.28	8.19	51	51	Peru	5.07	4.83
17	15	Bermuda	8.22	8.15	52	50	Venezuela	5.06	4.89
18	18	Japan	8.08	8.01	53	52	Jordan	5.03	4.77
19	17	Taiwan	8.05	8.05	54	54	India	4.96	4.66
20	20	Belgium	8.04	7.90	55	54	Philippines	4.90	4.66
21	21	Ireland	8.03	7.86	56	56	China	4.85	4.43
22	22	France	7.92	7.77	57	58	Egypt	4.81	4.26
23	24	Malta	7.78	7.56	58	53	Colombia	4.71	4.69
24	23	Israel	7.61	7.58	59	57	Russia	4.42	4.27
25	25	Italy	7.55	7.45	60	61	Sri Lanka	4.35	3.93
26	26	Spain	7.46	7.29	61	60	Ukraine	4.31	4.02
27	27	Portugal	7.38	7.14	62	62	Nigeria	4.25	3.92
28	28	Estonia	7.10	6.84	63	59	Ecuador	4.17	4.12
29	29	Slovenia	6.93	6.66	64	63	Pakistan	4.10	3.79
30	32	Greece	6.72	6.31	65	65	Vietnam	4.03	3.73
31	31	Czech Republic	6.68	6.32	66	64	Kazakhstan	3.89	3.78
32	30	Chile	6.57	6.47	67	66	Algeria	3.61	3.63
33	34	Hungary	6.30	6.16	68	67	Indonesia	3.59	3.39
34	36	Malaysia	6.16	5.97	69	68	Azerbaijan	3.29	3.26
35	33	United Arab Emirates	6.09	6.22	70	69	Iran	3.18	3.08

* New to the annual rankings in 2008. Note: A four-decimal score is used to determine each country's rank.
Source: Economist Intelligence Unit, 2008.

doi:10.15849/icit.2015.0062

B. Initiative stage

Initiative means "the power or ability to begin or to follow through energetically with a plan or task; enterprise and determination"[20].Subsequence, this is the second stage in this research. Furthermore, there is one theory named Initiative theory.

Furthermore, there are four variables very important framework related to Roger as following:

The innovation, Communication Channels, Social System, and Time.However that frame is used and applied at various areaslike: - public and privet sectors. EG is very big area and get interesting from many researchers and authors, and there are many avenues in this area. It is not explored yet.EG is one of the very important project, in public sector needs to comprehensive assessment in periodicity way. Evaluation of IT in general and in specific way in IS Acceptance is very important.

Regarding to this study, the authors show ex-pot from work for EG project. They mention three dimensionalframeworks for EG initiatives. During three domains of EG maturity levels, stockholder and Assessment levels and how that influence on EG initiative. Currently the range of the government agencies increasing to usage of IS at dailytask.There are scarcity of the information on the quality and efficiency of EG Initiative that lead tothe weakness of the evaluation EG quality[14].Recently, the success rates of EG projects are estimated to be less 15% [14]. The researchers and the studies that related on EG area are increased [14].

In same filed, there is a study that discusses and analysis of EG intuitive throughout evaluating the framework. This study mentions that there is no standardized measure for evaluating the impact of EG initiatives. However the survey improves that there is positive influence on the national and universal In case EG means are positively managed.EG policies are linked with different domain like economic, social and country infrastructures. There are many platform builders –new EG initiatives (Japan, Brazil, and Malaysia). In fact, this project focuses on economic filed that linked to EGinitiatives.

There are very important notes that should be mentioned here. There are some projects having short terms and the benefits from them can appear at short time also[14] for exampleSTOPE project[14].

C. Adoption Stage

The free dictionary presented adoption as a " act of accepting with approval; favorable reception"[21]. Generally, in US and at the three Latin American countries (Argentina, Brazil and Mexico) 2008. There is a very important reference to third nations and the researchers. Generally, government agencies should control the change management operation and the ability to applicable on the adoption on EG projects [15].

This study is divided into two parts. The first part of this paper reviewed the conceptual framework to test the development and the services of EG. The second part discussed the findings and highlighted on different nations on each countries as model for successful frame for positive improvement as well as the EG in a non –industrialized and also in developing countries[15].

D. Implementation stage

Implementation defined as act of accomplishing some aim or executing some order [22]. Currently, the implementation is the fourth stage in the EG project. At the implementation stage in Spain the government tarried to linked all Spanish city to enhance and gave the opportunity to various agencies to provide the services to the stockholders (26) at this stage the Singaporeans EG tried to engage the stockholders to practices of EG systems[17].The requirement of this stage is to use model that is aide the agencies to enhance the efficiency of the service to the stockholders. This study reviewed the macro perspective of different action the implementation of EG during analysis of different EG related initiatives under taken by the Singapore government. The analysis operation guide in the implementation EG likes:

- ✓ IC (Information Center).
- ✓ ICT infrastructure.
- ✓ EG infrastructure.
- ✓ EG promotion[17].

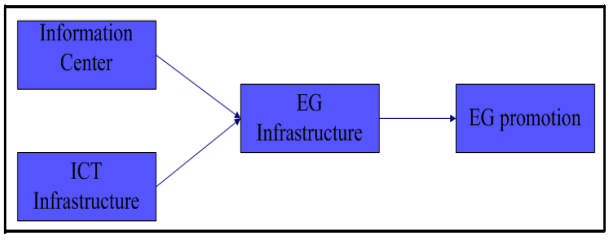

Fig. 4.These four items were very important to EG implementation framework [17]

doi:10.15849/icit.2015.0062

This study expects thespecific frame may be it used like a tool to organize and arrange EG project or to used and done strategy of EG implementation. EG strategy and plan, process proceed from exception of environment that has ability to dealing with internet technology and communication tools with public sector.

The Spain's low agree that exception to aide each city councils to be able to provide the serves electronically[18].

E. Developing and benchmark stage

The motoring, evaluating and benchmarking EG very important to policy and dictions makers to better evaluation criteria for their decision and developing these countries [14]. This study emphasizes conception and analysis of EG project [14].

There is interesting research viewed the influence of public participants on EG in three places Sweden, Bygga and Villa. The researcher was dealing with 16 organizations at different levels of society, including Education, Government, and Industry to aide and develop an innovative. The electronic portal for private construction industry. Therefore, the research aimed to view the challenges and how they can be overcome. [19].

V. Findings

This study could be the reference and guide for the researchers, students and howthey interested in EG because, this research viewed positions and challenges for many countries around the world.

This study shows sequence of EG stages by selected countries to view each country where it reach now up on available documents (studies, reports).

There is signal that certifies that we are going at the right track. We can see Brazil was shown at two stages but in deferent time,

Furthermore, Brazil viewed at Initiative stage in 2007

But after one year, Brazil comes up again at different stage in Adoption stage (in advance) at 2008. Those mean we going at the right way in this study.

Furthermore, we present many problems and issues related to the stages that countries were reached like:

Pinpointing the reasons and the means to increase the success rate of EG project. Also, Exploring framework to aid organize and coordinate different EG projects. Come up with scientific research related to acceptance technology, Shown three dimensional frameworks related to EG project.

Moreover, the overview of the rate of EG project for many countries around the world for example, Estonia, Swedish, United States,UK, Canada, Malaysia, Egypt and Yemen, etc.

These challenges and issues are the reason for why these countries are late.From this overview we can see the deferent of positionsamong the countries and at same time same country in deferent times. Same issue for region to know the problems and processing it as fast as they can. Different developing nations should pass likewise a problem by this study.

VI. Future works

For future work, any country try to enhance information system specially EG project.Developing countries'society needs more applications to be applied. We strongly recommend launching Electronic-Census andpublish information kiosks in different region for many reason like security issue for the citizen and also this application will decrees the effort, corruption, time and money to the employees in the first hand and citizen from the anther hand.

VII. Conclusion

We can get benefit from this overview to know what the issues that countries have to face and how can pass it by governments to enhance EG project. In brief, governments can use this study to know the position map for many countries to get the benefit from it.

Furthermore government can study them (countries was viewed in this study) to enhance EG project. It is useful for researchers and government for several reasons. First, we were preview important models related to three countries these countries took good positions at EG ranking in the world. Second, this research identifies the essential factors that might lead to the adoption and implementation of a successful EG plan. Finally, it views the challenges that the country may face.

doi:10.15849/icit.2015.0062

References

[1] United Nations, "World Public Sector Report 2003," New York 2003.

[2] A. K. Faieq, M. K.Faaeq, and H. A. Hambali, "A requirement model for Baghdad University's E-magazine System for Scientific Research " in EEE'09 - The 2009 International Conference on e-Learning, e-Business, Enterprise Information Systems, and e-Government Las Vegas, USA, 2009.

[3] M. K.Faaeq, N. A. Ismail, W. R. S. Osman, A. K.Faieq, and M. Aleqab, "Application of TAM in the readiness for E-Government services," in 12th IBIMA conference on Creating Global Economies through Innovation and Knowledge Management Kuala Lumpur, Malaysia, 2009.

[4] "MSG's ITLG blog." vol. 2009, 2009.

[5] A. Doko, D. Adarnalee, and Y. A. Salem, "A Workflow Management System for E-Government " in informantion Technology Engineering. vol. Graduation Damascus: Damascus University.

[6] J.Satyanarayana, e-Government. New Delhi, 2006.p140.

[7] N. T. Alsohybe, "The implementation of e-government in the republic of yemen: an empirical evaluation of the technical and organizational readiness," Capella University, 2007.

[8] Y. S. Wang, Y. W. Shih," Why do people use information kiosks? A validation of the Unified Theory of Acceptance and Use of Technology," Government Information Quarterly, vol. 26, pp. 158–165, 2009.

[9] United Nations, "UN Global E-government Readiness Report 2005," 2005.

[10] H. Sun and P. Zhang, "A Methodological Analysis of User Technology Acceptance," in 37th Hawaii International Conference on System Sciences, Hawaii, 2004.

[11] United Nations, "United Nations e-Government Survey 2008," New York 2008.

[12] R. Kumar, M. L. Best"Impact and Sustainability of E-Goverenment Services in Developing Countries: Lessone Learned from Tamil ,India,"pp.1-12,2005.

[13] IBM Institute for Business Value, "E-readiness rankings 2008 Maintaining momentum," 2008.

[14] J. Esteves and R. C. Joseph, "A comprehensive framework for the assessment of eGovernment projects," Government Information Quarterly, 2007.

[15] T. Y. Lau, M. Aboulhoson, C. Lin, and D. J. Atkin, "Adoption of e-government in three Latin American countries: Argentina, Brazil and Mexico," Telecommunications Policy, pp. 88–100, 2008.

[16] S.C. Y. Luk, ,"The Impact of E-government in Greater China: Case Studies of Hong Kong, Taiwan, and Singapore1," 17th Biennial Conference of the Asian Studies Association of Australia in Melbourne 1-3 July 2008, pp. 1–23, 2008.

[17] C. M. L. Chan, Y. Lau, and S. L. Pan, "E-government implementation: A macro analysis of Singapore's e-government initiatives," Government Information Quarterly, vol. 25, pp. 239–255, 2008.

[18] S. de Juana- Espinosa, J. Valdés-Conca, E. Manresa-Marhuenda, and L. García-Felonés, "E-Government Implementation in Spain: the Case of the City of Benidorm," Innovation and Knowledge Management in Business Globalization: Theory & Practice, pp. 1125-1130.

[19] I. Ruuska and R. Teigland, "Ensuring project success through collective competence and creative conflict in public–private partnerships – A case study of Bygga Villa, a Swedish triple helix e-government initiative," International Journal of Project Management, 2008.

[20] TheFreeDictionary http://www.thefreedictionary.com/initiative. Retrieved February 15, 2012.

[21] TheFreeDictionary http://www.thefreedictionary.com/Adoption. Retrieved February 15, 2012

[23] iraq electronic government portal http://www.egov. gov.iq/egoviraq/index.jsp?sid=1&id=263&pid=250. Retrieved February 16, 2012