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Enhancing the Adoption of E-Government Systems through Open Government and Open Government Data (OGD) Initiatives in Qatar

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Abstract
The present study aimed to analyze the status of e-government in developing countries, and particularly at Qatar. It also aimed to analyze the status of Open Government Data (OGD) in Qatar in order to identify the main motives that prompted the Qatari government to launch Open Government Data initiatives. In order to cover the research objectives effectively; the researcher used two main methods in order to cover the study objectives. The researcher used the qualitative method to achieve the goals of the study optimally and by reference to all sources on the subject of the study of previous studies, books and references. The researcher also used the analytical method through analyzing the status of e-government in developing countries, and particularly at Qatar. It also aims to analyze the status of Open Government Data (OGD) in Qatar in order to identify the main motives that prompted the Qatari government to launch Open Government Data initiatives. The research concluded that although Qatar is trying to develop e-government systems in various citizen transactions, and while trying to keep pace with the developed countries in the development of open data, Qatar still needs many steps and initiatives to promote e-government by relying on Open Government Data. The reliance of Qatar's Government on open data would encourage individuals to participate in decision-making, facilitate citizens' access to the required information, and increase citizen adoption of e-government. The research also concluded that Open Government Data (OGD) represents a new stage in activating the implementation of the e-government of Qatar, as it helps in achieving the basic objectives that the e-government seeks to achieve. The application of OGD initiatives may be a challenge for developing countries, due to several reasons, such as poor coordination among various government agencies, poor quality of published data, and the absence of laws and regulations that govern and control the nature of such initiatives. The research recommended in developing an Open Government Data strategy. This strategy will represent the road map for the Qatari government to activate the application of OGD initiatives. The research also recommended in establishing a framework for OGD, develop a legislative framework for OGD initiatives to control these initiatives and raise their success rate and enhancing the use of Web 2.0 regarding its significant benefits, since this web allowing the user for data modification and access to it when needed.
Keywords: e-government, Open Government, Open Government Data (OGD).

1.0 Introduction

Over the past period, especially during the last two decades, the world has witnessed many changes in various aspects of life. One of the most prominent areas that have emerged and changed many aspects of life is the technological development, which began from the way people interact with each other, sharing personal information and their use of social platforms, and adopting them in their business transactions on the electronic environment in electronic commerce. This development extended to governments and the public sector, where governments benefited from technological development and sought to develop several initiatives to provide services to citizens using ICTs.

Implementing the e-government has become a global phenomenon [1]. E-Government includes the dissemination of information on the Internet through a website, where citizens can access this site and access to their own information, and citizens can carry out their transactions through this site[2]. These services took a long time to complete before the emergence of e-government, but the emergence of the e-government helped citizens to overcome the disadvantages that existed in the past and deal with their transactions through the Internet easily and at any time and from anywhere[3].

Governments' reliance on the use of the Internet in various transactions contributes to many benefits, such as the easy dissemination of information, the improvement of national spending, and the provision of services more efficiently and effectively[4]. As a result of these benefits, many governments around the world have adopted the concept of e-government[5]. A number of developed countries, such as the United States of America, Australia and

[1] Valentina Ndou, 'E-government for developing countries: opportunities and challenges' (2004) 18 *The Electronic Journal of Information Systems in Developing Countries* https://www.ejisdc.org/ojs2/index.php/ejisdc/article/view/110/110.
[2] S Bhatnagar, 'E-government and access to information' (2003) Global Corruption Report.
[3] Mofleh and M Wanous, 'Developing Countries and ICT Initiatives: Lessons Learnt from Jordan's Experience' (2008) 34 *The Electronic Journal of Information Systems in Developing Countries.*
[4] UNESCO, E-government toolkit for developing countries (2005) <http://unesdoc.unesco.org/images/0013/001394/139418e.pdf>.
[5] J W Seifert and G M Bonham, 'The Transformative Potential of E-government in Transitional Democracies' (2003) 11(2) *Public*

Britain, have adopted the concept of e-government at an early stage compared with other countries in the world[1]. The global e-Government report of 2002 of United Nations and the American Society for Public Administration indicated that 88.9% of the United Nations Member States rely on the Internet to provide services to their citizens[2]. In 2010, the United Nations conducted a study on e-Government activities for all countries of the world. The study found that 98% of the countries showed the presence of government on the Internet through the design of e-government websites[3]. The results of this study were compared with a study conducted in 2003 by the United Nations UN that found that only 18 countries rely on e-government systems[4].

Despite these benefits, the results indicate that the implementation of the concept of e-government has not yet reached the required level, and that there are many challenges that prevent its implementation as required. In order to overcome these obstacles facing the application of e-government, and to encourage the public to apply this concept and realize its large benefits; many developed and developing countries began a new phase of the opening of their systems and transactions through e-government. One of the most important of these activities is the Open Government Data (OGD) Initiative, which will provide many facilities for citizens. This new activity requires different governments to use ICT tools to enable citizens to access government information more easily[5].

Since 2003, a new wave of applications has emerged on the Internet, known as 'Web 2.0'. These applications are characterized by high speed and low cost. However, despite the emergence of these applications, governments' reliance on these applications to provide their services electronically is still low[6]. And this paradox is considered as the starting point for the current research.

The present study aims to analyze the status of e-government in developing countries, and particularly at Qatar. It also aims to analyze the status of Open Government Data (OGD) in Qatar in order to identify the main motives that prompted the Qatari government to launch Open Government Data initiatives. Through the results of the study, the researcher will develop a set of recommendations to stimulate the governments of developing countries in general, and the Government of Qatar in particular to improve Qatar's government and to improve Qatar's initiative toward Open Government Data (OGD). These recommendations will contribute to improving the services provided by this government to citizens, and will increase the transparency and openness of the Qatar government.

2.0 Research problem

The provision of high-quality, value-added services through the Internet using e-government must be the primary objective that various public sector institutions must strive to achieve. The amount of accuracy of the services available and the accessibility to get these services through the Internet increases the desire of citizens to deal with these websites[7]. The use of information and communications technology (ICT) to open the government and establish a trust between citizens and the government increases the extent of citizens' adoption of this strategy[8].

Statistics indicated that the State of Qatar suffers from a lack of reliance on e-government, in addition to the low use of citizens[9]. The results of a United Nations survey, which conducted in 2012, regarding the extent of e-government use across the world show that the level of e-government use in developing countries is still low. The study focused particularly on the Gulf countries, such as Qatar, Bahrain and Saudi Arabia, and emphasized that Nigeria, Pakistan and Bangladesh are among the leading countries experiencing low e-government use[10]. Al-Shafi and Weerakody in their study, which targeted more than 1,500 Qatari citizens, found that despite technological advances and infrastructure development in Qatar, Qatar suffers from a low level of e-government use[11].

Administration Electronic Bulletin Lomonosov Moscow State University 19 http://old-ej.spa.msu.ru/images/File/2003/bonham%281%29.pdf.

[1] G Al-Kibsi et al, 'Putting citizens on-line, not in line' (2001) *McKinsey Quarterly* 64.

[2] United Nations Division of Public Economics and Public Administration and the American Society for Public Administration, 'Benchmarking e-Government: A Global Perspective' (2002) http://www.itpolicy.gov.il/topics_egov/docs/benchmarking.pdf.

[3] United Nations Public Administration Network, 'United Nations E-Government Survey 2010' (2010) UN Doc ST/ESA/PAD/SER.E/131 <http://www2.unpan.org/egovkb/documents/2010/E_Gov_2010_Complete.pdf>.

[4] United Nations Public Administration Network, 'E-Government Survey 2012: E-Government for the People' (2012) ST/ESA/PAS/SER.E/150 <http://unpan1.un.org/intradoc/groups/public/documents/un/unpan048065.pdf>.

[5] The Open Knowledge Foundation, *Welcome to Open Government Data* http://opengovernmentdata.org/.

[6] C G Wescott, 'E-government in the Asia-Pacific Region' (2001) 9 *Asian Journal of Political Science* 1; David Osimo, 'Web 2.0 in government: why and how ' (2008) EUR Number: 23358 EN *Joint Research Centre (JRC) Scientific and Technical Reports* ; S Al-Shafi and V Weerakkody, 'Understanding Citizens' Behavioural Intention in the Adoption of e-Government Services in the State of Qatar' (2009).

[7] Carter, L and F Belanger, 'Citizen adoption of electronic government initiatives' (Paper presented at the 37th Hawaii International Conference on System Sciences, Island of Hawaii, 2004).

[8] Ibid.

[9] United Nations Public Administration Network, 'E-Government Survey 2012: E-Government for the People' (2012) ST/ESA/PAS/SER.E/150 http://unpan1.un.org/intradoc/groups/public/documents/un/unpan048065.pdf; Shafi Al-Shafi and Vishanth Weerakkody, 'Implementing and managing e-government in the State of Qatar: a citizens' perspective' (2007) 4(4) *Electronic Government, an International Journal* 436.

[10] United Nations Public Administration Network, 'E-Government Survey 2012: E-Government for the People, above n 14.

[11] Shafi Al-Shafi and Vishanth Weerakkody, above n 14.

The study of Al-Shafi and Weerakody recommended the need for further studies that aims to enhance the implementation of e-government in Qatar and increasing citizens' confidence in it[1]. According to that; the present study represents a response to the recommendations of previous studies which suggested the need of further studies in developing countries, particularly in the State of Qatar, regarding the implementation of e-government. It is hoped that the current study will contribute to Qatar's increasing reliance on e-government and increase citizens' confidence in using it.

3.0 Research methodology

Using a suitable research methodology is considered as an essential element in each research. In order to cover the research objectives effectively; the researcher will mainly use two main methods in order to cover the study objectives.

The researcher will use the qualitative method to achieve the goals of the study optimally and by reference to all sources on the subject of the study of previous studies, books and references. The qualitative approach considered as the best methods that are used for the purposes of collecting theoretical information relevant to the subject of study. This approach depends mainly on scientific observation and the return to primary and secondary sources related to the subject.

The researcher will also use the analytical method through analyzing the status of e-government in developing countries, and particularly at Qatar. It also aims to analyze the status of Open Government Data (OGD) in Qatar in order to identify the main motives that prompted the Qatari government to launch Open Government Data initiatives.

4.0 Theoretical literature

4.1 E-government

4.1.1 E-government definitions

Various definitions and concepts of e-government have been developed. It is defined as the process of using government institutions for IT, and the ability to transform relationships with citizens, businessmen and various government institutions[2]. This technology can provide many services to citizens; improve interaction with businessmen and various government institutions by providing government services to individuals, institutions, government departments and the private sector through the Internet[3]. The World Bank defined e- government as an essential task for government to re-invent itself and manage its functions effectively to their citizens and the global economy through the Internet[4]. UNESCO defined e-government as a radical shift in the way the government works to catch up with the tremendous developments that the private sector has led in the field of e-business by providing services and delivering a large amount of transactions using the internet[5].

Lee and U Lei defined the electronic or digital government as using information technology and credentials to support the effectiveness of government services, to deal with citizens better and easier, to allow access to greater information, and to make the government itself more responsive to the wishes of citizens[6]. E-government may include the provision of services over the Internet, the telephone, community centers, wireless devices or other available communication systems[7].

E-government is not a substitute for short-term economic development and budget provision, nor is it a single event that may change immediately and forever. E-government represents a process, evolution or often conflict that exposes costs and financial and political risks.

4.1.2 Levels of e-government

Transactions through the Internet can occur between different levels and in more than one domain. With regard to e-government, there are four main areas[8]:

1. **Government-to-Government (G2G)**: This interaction takes place between different governmental bodies and at various local and international levels.
2. **Government-to-Citizen (G2C)**: This interaction is between citizens and government agencies. This interaction includes the provision of government services and transactions to citizens through the Internet. This type of interaction is considered essential in e-commerce.

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[1] Ibid.
[2] Valentina Ndou, 'E-government for developing countries: opportunities and challenges' (2004) 18 *The Electronic Journal of Information Systems in Developing Countries* <https://www.ejisdc.org/ojs2/index.php/ejisdc/article/view/110/110>.
[3] K Layne and J Lee, 'Developing fully functional E-government: A four stage model' (2001) 18 *Government Information Quarterly* 122.
[4] The World Bank, *E-government Definition* <http://go.worldbank.org/M1JHE0Z280>.
[5] UNESCO, *E-government toolkit for developing countries* http://unesdoc.unesco.org/images/0013/001394/139418e.pdf.
[6] B P Lee and U Lei, 'Adoption of e-government services in Macao' (Paper presented at the 1st international conference on Theory and practice of electronic governance, Macao, 2007).
[7] L Tung and O Rieck, 'Adoption of electronic government services among business organizations in Singapore' (2005) 14 *Journal of strategic information systems* 417.
[8] Valentina Ndou, above n18.

3. **Government-to-Business (G2B)**: This interaction occurs between the government and the commercial sector. This type of interaction includes various business activities, as well as identification of regulations, laws, licensing models, etc.
4. **Government-to-Employee (G2E)**: This interaction occurs between government and employees. Through this interaction, salaries are provided to employees, and various operations related to retirement, insurance, housing and others.

4.1.3 Benefit of e-government

The philosophy of e-government is linked to the actual physical government as a source of information and services, where citizens, businesses and various organizations in the community are treated as customers or beneficiaries who wish to benefit from this information and government services. This represents a fundamental change in the culture of services implementation, government transactions and the perception of citizens and businesses towards this government.[1]

The strategic goal of e-government is to support and streamline government services to all stakeholders, including; government, citizens and business. The use of ICT helps to link all these three parties together and strengthen activities and processes. In other words, e-government supports electronic means and contributes to the quality of the work which it provides to the parties concerned[2]. The major goals of e-government include[3]:

1. Supporting the shift from negative access to information to the active participation of citizens by informing, consulting and encouraging them to participate in various public activities.
2. Reducing the cost of government services and procedures and operations.
3. Increasing the efficiency and effectiveness of the government's work through its dealings with citizens and business enterprises.
4. Increasing the speed, improving transparency and increasing the effectiveness of public administration activities.
5. Meeting the needs and expectations of society in a satisfactory manner by simplifying interaction and dealing with many services.
6. Building user trust
7. Attracting investments by identifying existing investment opportunities.
8. Overcoming the digital divide with developed societies.
9. Achieving sustainable development.

4.2 Open Government and Open Government Data

The open government represents a new strategy through which the government's interaction with citizens and others can be developed using ICT networks and in more innovative ways[4]. This strategy also includes the ability of the government to request assistance from the citizens, consult them and take support from them. In general, this strategy aims to create more effective and stronger institutions[5]. The data used in the open government are publicly accessible and free to be accessed by all citizens. In the case that the Government issues publicly accessible data tin accordance with Open Data principles, it is called open government data[6].

The Open Knowledge Foundation (OKF) defined the government's data as the data provided by the government and subject to government oversight. It is also a data that citizens can access easily and freely without any restrictions or contraindications[7].

The Open Government and the Open Government Data (OGD) relate directly to the Access to knowledge (A2K) movement[8]. The Access to Knowledge (A2K) Movement is one of the most recent movements that has recently emerged and aims to bring remarkable progress and growth in societies. This movement is also designed to facilitate easier access for individuals to products and services[9]. Open Government Data (OGD) reflect the strong relationship between the government and the citizens, and increase citizens' confidence in the government. It also represents a change and transformation in the organizational concept of the nature of the relationship between the citizens and the government[10]. The World Wide Web Foundation has shown that the Open Government consists of four key elements, including; transparency, efficiency, participation and accountability,

[1] UNESCO, above n 21.
[2] K Layne and J Lee, above n 19.
[3] B P Lee and U Lei, above n22; L Tung and O Rieck, above n 23; Valentina Ndou, above n 18.
[4] Beth Simone Noveck, *Wiki government: how technology can make government better, democracy stronger, and citizens more powerful* (Brookings Institution Press, 2009).
[5] Ibid.
[6] United Nations, 'Guidelines on Open Government Data for Citizen Engagement ' (2013) UN Doc ST/ESA/PAD/SER.E/177 http://www.unpan.org/DPADM/EGovernment/OpenGovernmentDataandServices/tabid/1536/language/en-US/Default.aspx
[7] The Open Knowledge Foundation, *Welcome to Open Government Data* http://opengovernmentdata.org/.
[8] Jeremy Malcolm, *Multi-stakeholder governance and the Internet Governance Forum* (Consumers International, 2008); Frederick Noronha and Jeremy Malcolm, *Access to Knowledge, a guide for everyone* (2010)
[9] Ibid.
[10] United Nations, 'Guidelines on Open Government Data for Citizen Engagement ', above, n 30.

where the combination of these four elements expressing the open government[1].
The World Wide Web Foundation noted the benefits of applying open government data, which include[2];

1. Support government transparency
2. Activating citizen participation in various activities through focusing on services that serve citizens.
3. This strategy represents a means by which cooperation between government agencies and various civil society organizations can be activated.
4. Speed up access to services and information.
5. Provide innovative ways to save government time and citizens' time.

In addition to you, OGD is an essential step for economic progress. The provision of government data through the Internet helps to engage citizens and enhance their role by identifying the obstacles they encountered while accessing their information and thus thinking in innovative ways to overcome these problems[3]. A study conducted by the McKinsey Global Institute found that the provision of open data contributes to the generation of an added economic value of 3 to 5 trillion dollars per year. This added economic value can be achieved especially in the education, transport, electricity, health and gas sectors[4].

4.2.1 The impact of Web 2.0 on e-government

Web 2.0 represents a modern generation of web applications that allow users to communicate and exchange information through the Internet[5]. Web 2.0 has received a lot of criticism from scientists, describing it as vague and unclear[6]. But the results indicated that this web is one of the most prominent applications that have been able to transform and change the way people interact with each other[7]. Web 2.0 gives users the ability to edit, read, and add information through the Internet[8]. Compared to Web 1.0, Web 2.0 is more dynamic because it gives users the possibility to modify[9].

Web 2.0 is able to build high value for users as a result of the advantages it offers to them[10]. On the other hand, scientists have agreed that providing free public sector information to users does not only contribute to stimulating business, but also helps to stimulate public value[11]. The results of a study conducted by IPTS showed that the majority of the Web 2.0 projects were based on the reuse of public data[12]. The following image contains examples of some sites that use the Web 2.0 by reusing the public data.

[1] World Wide Web Foundation, *Open Government Data* http://www.webfoundation.org/projects/ogd/.
[2] Ibid.
[3] Jeremy Malcolm, above n 32.
[4] McKinsey Center for Government, *Open data: Unlocking innovation and performance with liquid Information* http://www.mckinsey.com/insights/business_technology/open_data_unlocking_innovation_and_performance_with_liquid_information.
[5] RT Wigand, 'Web 2.0: Disruptive technology or is everything miscellaneous' (2007) *Information management: Setting the scene* 269.
[6] T O'Reilly, *Web 2.0: Compact Definition? O'Reilly Radar 2005* http://radar.oreilly.com/2005/10/web-20-compact-definition.html.
[7] Tapiador, Antonio, Antonio Fumero, Joaquin Salvachua et al 'A Web Collaboration Architecture' (Paper presented at International Conference on Collaborative Computing: Networking, Applications and Worksharing, Atlanta, November 2006) 1-4.
[8] T O'Reilly, above n 40.
[9] Tapiador et al., above n 41.
[10] D. Osimo, 'Benchmarking eGovernment in the Web 2.0 era: what to measure, and how' (2008) 4 *European Journal of ePractice*.
[11] Ibid.
[12] Ibid.

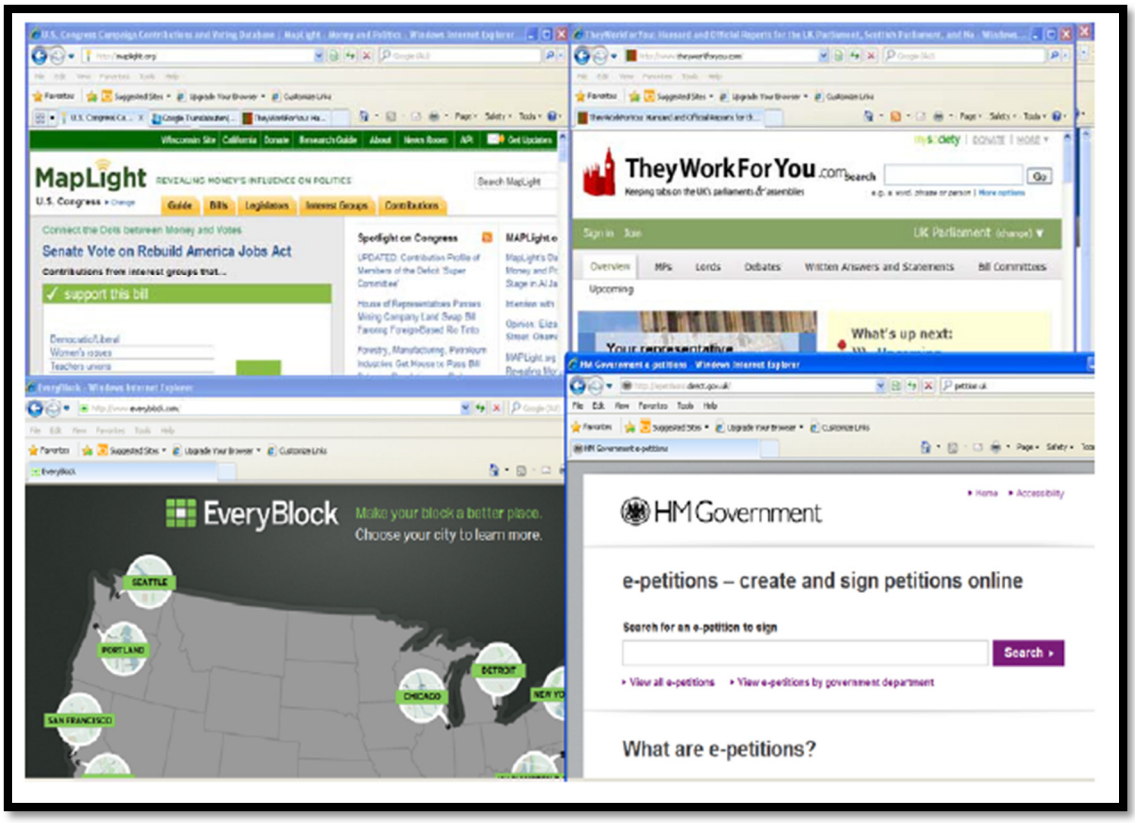

Figure 1: Examples of Web 2.0 technologies reusing publuc data

Through the previous picture, it is clear that these sites use public data in order to increase transparency, activate citizens 'participation in various activities, and facilitate citizens' transactions. Thus, the use Web 2.0 in e-government applications increases the effectiveness and efficiency of e-government in the performance of its duties.[1]

4.2.3 Open Government initiatives in developed countries

The use of Web applications in developed countries has greatly influenced the lives of citizens in a variety of ways. This effect includes adding value to data available to the public, easy access to these data, and increasing the rate of individual who use these applications[2]. After observing the increase rates, the developed countries sought to motivate citizens to increase their use of these applications, to facilitate their access to information by providing information on government websites free of charge, and to read them automatically so that they can be re-used when needed[3].

Various Open Government Data (OGD) initiatives have been launched in developed countries. In America, former US President Barack Obama has since the first day of his inauguration launched initiatives to stimulate the application of OGD. In September 2011, the Open Government Partnership (OGP) was launched. This partnership was launched as a global effort to improve the situation of governments around the world. Initially, the partnership consisted of eight developed countries, but at the present time the number of countries that have joined this group is 63, and the number is still increasing.[4]

In December2011, the European Commission set an OGD strategy, with expectations that this strategy will contribute to the strengthening of the EU economy by 40 billion euros annually. The estimated benefit from the implementation of the European Commissioner's strategy prompted the Vice-President of the European Commission, Neelie Kroes, to describe the OGD as the 'new oil'.[5]

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[1] Ibid.
[2] Cabinet Office, *Open Government Partnership UK National Action Plan 2013 to 2015* http://data.gov.uk/sites/default/files/library/20131031_ogp_uknationalactionplan.pdf.
[3] Ibid.
[4] Ibrahim Ahmed Elbadawi, 'The State of Open Government Data in GCC Countries' (Paper presented at the Proceedings of the 12th European Conference on e-Government, 2012).
[5] Ibid.

4.3 Contest of the study

4.3.1 E-government at Qatar

Qatar is located in the middle of the western coast of the Persian Gulf. Qatar is one of the high-income Gulf States. However, Qatar is classified as a developing country based on the IMF report of 2012. Qatar is one of the leading countries in the field of e-government[1]. Qatar has witnessed a modernization in the public sector environment based on information and communication technology in recent decades. In July 2002, Qatar launched its e-government initiative which aimed at raising the level and efficiency of the Qatari government and providing electronic services away from paper use[2]. This initiative was applied experimentally to renew the residence permits. The application included three government parties, including; the Ministry of Interior, Qatar National Bank and Qatar Central Bank. After the huge success of the pilot initiative, the Government of Qatar has sought to activate the application of e-government in various government agencies[3].

The ictQATAR was established in 2004. IctQATAR aims to organize and develop Qatar's integrated IT direction strategy, which includes the development of infrastructure, the development of the delivery of services and the organization of public services.[4]

The Qatari e-Government site *Hukoomi* is a national portal that provides a range of services to Qatari citizens[5]. The portal contains many articles related to Qatar and its laws. The site also includes many services for citizens, such as the possibility of paying traffic violations, school enrollment, renewal of residence permits and many other services that can be conducted through the Internet[6]. The objective of this site is to improve the efficiency of services provided to citizens, to facilitate citizens' access to services and to encourage citizens to increase their use to this site. *Hukoomi* has increased the productivity and effectiveness of e-services provided to beneficiaries[7].

Qatar, like other developing countries, has not seen significant progress in e-government. Researchers have also concluded that the number of citizens who adopted the e-services is still low[8]. The adoption of e-government in Qatar and the provision of e-services were slower than the expectations of the Qatari government. The results also indicated that the establishment of a Qatari society based on information technology and electronic services is not easy and represents a challenge for the Qatari government. In this regard, Mr. Yazen Alsafi, Service Delivery Section Manager of Qatar's e-Government at ictQATAR clarified that Qatar is slow in improving the e-government and that citizens 'demand for these sites is still low. He argued that it is necessary to increase citizens' awareness of the importance of e-government and motivate them to use these sites[9].

Al-Shafi and Weerakkody conclude in their 2009 study that one of the main reasons why citizens are less likely to use e-services through e-government in Qatar is the lack of public confidence in these sites due to their concern about security and confidentiality[10]. In order to overcome these obstacles to individuals' adoption of e-government, many developed countries have begun to apply the Open Government. A group of developing countries have also begun to try to keep pace with the developed country regarding the implementation of the Open Government. One of these developing countries is the State of Qatar, where Qatar has launched an 'Open Data' strategy to encourage citizens to adopt e-government.

4.3.2 Qatar's Open Government Data (OGD)

Recently, Qatar launched the Open Government Data Initiative to develop the e-government system. Through Open Government Data, the Government of Qatar provides free and unrestricted data to citizens, where citizens can access information very easily. In addition, Qatar has launched a data portal (Qalm) to facilitate citizens' access to data. A group of governmental organizations participated in the preparation of the data portal, including; the General Secretariat for Development Planning, the Statistics Authority, the Supreme Council of Health, the Supreme Education Council, the Supreme Council of Family Affairs, ictQATAR, Ministerial Cabinet and the Permanent Population Committee[11]. The main objective of the data portal project is to achieve the national strategic planning objectives for information management. The following figure shows a snapshot ofthe Qatari Open Data Portal.

[1] Shafi Al-Shafi and Vishanth Weerakkody, above n 14.
[2] Ibid.
[3] Ibid.
[4] United Nations Public Administration Network (UNPAN), 'United Nations Global e-Government Readiness Report 2005: From e-Government to Inclusion' (2005) UN Doc UNPAN/2005/14 http://unpan1.un.org/intradoc/groups/public/documents/un/unpan021888.pdf.
[5] ictQatar, *Hukoomi, Qatar e-Government* http://portal.www.gov.qa/wps/portal/homepage.
[6] United Nations Public Administration Network (UNPAN), 'United Nations Global e-Government Readiness Report 2005, above n 55.
[7] ictQatar, *Hukoomi, Qatar e-Government*, above n 56.
[8] Al-Shafi, S and V Weerakkody, 'Understanding Citizens' Behavioural Intention in the Adoption of e-Government Services in the State of Qatar' (2009); Shafi Al-Shafi and Vishanth Weerakkody, 'Factors affecting e-government adoption in the state of Qatar' (2010).
[9] United Nations Public Administration Network (UNPAN), 'United Nations Global e-Government Readiness Report 2005, above n 55.
[10] Al-Shafi, S and V Weerakkody, above n 59.
[11] Qatar Government, *Qatar's Data Portal* http://www.qalm.gov.qa/.

Figure 2: A snapshot ofthe Qatari Open Data Portal (Qalm.gov.qa)

The portal project can be considered as a strategy that will motivate citizens to participate and rely on e-services. This portal provides the opportunity for communication between individuals and government bodies to exchange views and initiatives that will improve government services provided, and to facilitate citizens' access to services faster and more effectively.

4.4 Conclusion

Although Qatar is trying to develop e-government systems in various citizen transactions, and while trying to keep pace with the developed countries in the development of open data, Qatar still needs many steps and initiatives to promote e-government by relying on Open Government Data. The reliance of Qatar's Government on open data would encourage individuals to participate in decision-making, facilitate citizens' access to the required information, and increase citizen adoption of e-government. In general, increasing citizens' reliance on e-government contributes to offering many advantages to the State of Qatar, such as; reducing the cost of government services, improving transparency, increasing the effectiveness of public administration activities, building user trust and attracting investments by identifying existing investment opportunities. All of these benefits will contribute in achieving sustainable development.

Open Government Data (OGD) represents a new stage in activating the implementation of the e-government of Qatar, as it helps in achieving the basic objectives that the e-government seeks to achieve. The application of OGD initiatives may be a challenge for developing countries, due to several reasons, such as poor coordination among various government agencies, poor quality of published data, and the absence of laws and regulations that govern and control the nature of such initiatives.

As the primary objective of the current research is to enhance the adoption of e-government systems through Open Government and Open Government Data (OGD) initiatives in Qatar, the research seeks to develop a set of recommendations that will overcome constraints that hamper the implementation of OGD initiatives. The research recommends

1. Develop an Open Government Data strategy. This strategy will represent the road map for the Qatari government to activate the application of OGD initiatives. This strategy will increase Qatar's chances of success in its initiatives to develop e-government. This strategy can also overcome weak cooperation between government agencies.
2. Establish a framework for OGD. This framework should include details of the mechanism of work and the responsibilities of the various government bodies.
3. Develop a legislative framework for OGD initiatives to control these initiatives and raise their success rate.
4. Enhancing the use of Web 2.0 regarding its significant benefits, since this web allowing the user for data modification and access to it when needed.

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