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Improving transparency, openness, and efficiency of Qatar's e-government systems through Open Government Data (OGD)

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Abstract

This paper examines the implementation of Open Government Data (OGD) concepts and practices in a case study of one of developing countries, the State of Qatar. It aims to achieve more accountable, transparent, and effective government. The examination starts with an inspection of the use of internet and information and communication technologies by governments in the developed countries to distribute government information and to make their internal transactions open for public. It also discusses the factors influencing these developments. The paper includes an in-depth case study of OGD practices in the State of Qatar by investigation and study its current OGD initiative through direct interviews with the responsible government officials. The paper concludes a set of recommendations for Qatar to enhance the accessibility and reusability of its OGD and implement successful and sustainable OGD systems and practices, thereby increasing government transparency and openness.

Keywords: Qatar, E-Government, Web 2.0, Open Government, Open Government Data, Open Data, Transparency, Openness.

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1.0 Introduction

In the past two decades, Information and communication technologies (ICT) and the continuous growth of the World Wide Web have intensely altered the lives of people universally. We live in a time in which the online electronic situation fills all parts of our lives. Therefore, this affects our lives in several ways such as the interaction between people, how they exchange personal information on a social level and how they communicate using complex business interactions in the online environment.

One of the mostly known paradigms is 'e-commerce' that has changed the uptake of the Internet limited to the commercial sector. Governments and public-sector organizations have followed ensemble initiatives designed to enable Government to use ICT-enabled medium to provide services and interact with citizens.

To motivate approval by the public of e-Government systems, we aim to understand the advantages that move governments from the Internet and ICTs in both developed and developing countries have started to additional open up their systems and transactions as a new phase of e-Government activity. The main characteristics of this new wave of e-Government programs is Open Government Data (OGD) initiative to allow citizens to access, use, reuse, and redistribute government data and information. The implementation of OGD practices and systems makes public sector organizations and government bodies harness ICT tools to enhance public participation and empowers their citizens with better access to government information.

The acceptance, perception and usability of high-value and large-scale e-Government electronic services should be the major purpose focusing on public-sector organizations.

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These services are basically 'contingent upon citizens' willingness to adopt'.[1] The use of ICTs to open up government and to establish more collaborative citizen-government relations will expressively improve adoption levels. Like developing countries, Qatar's e-government initiative faces many challenges such as low adoption and limited usability.

According to the United Nations' 2012 e-Government survey of Arabian Gulf countries of Qatar, Saudi Arabia and Bahrain, and countries such as Nigeria, Pakistan, and Bangladesh), that the level of usage of eGovernment in many developing countries still low.[2] Al-Shafi and Weerakody showed that the levels of e-Government usage remained low and much work needed to be done to meet the citizens' expectations for e-Government by surveying more than 1500 citizens. They suggested future efforts focused on Open Government Data. Therefore, a case-study interviews with the government officials and project managers responsible for the Qatari e-Government initiative is proposed in this paper to better understand the government's viewpoint and to classify the gaps between the citizens' expectations and government.

2.0 Research problem

Opening government data and information is important to advance and further develop the knowledge-based economy. This makes government data and information available online provides as an incentive requirement for individuals and organizations to reuse it to generate advanced solutions to outperform the challenges and difficulties faced by the community.

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[1] L Carter and F Belanger, 'Citizen adoption of electronic government initiatives' (Paper presented at the 37th Hawaii International Conference on System Sciences, Island of Hawaii, 2004).
[2] 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>.

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This research aims to fill the gap in the current form of knowledge in the context of developing countries, and to recognize methods to harness Web 2.0 technologies to open up government information and better utilization of e-Government services. It also introduces recommendations for Qatar including the steps taken to improve the benefits that can be attained through Open Government and Web 2.0 technologies. The real significance of this research lies in planning a road map for developing countries to achieve an open and comprehensive government because the aim of this paper is to encourage and growth the openness of government.

3.0 Research questions

It is hoped based on this study that e-Government in Qatar could be improved and developed by implementing the basis of the new phase of Open Government Data in the country. Thus, the primary research question determined by this paper is:

> **How could Open Government Data (OGD) concepts and practices be introduced and implemented in the State of Qatar in order to achieve more transparent, effective and accountable government?**

Under this primary question, the following secondary questions have been taken:

- **What are the benefits of Open Government Data (OGD)?**
- **What is the current status of OGD in Qatar?**
- **What are the key driving forces for opening up government in the State of Qatar?**
- **What approach has Qatar followed to initiate and manage its OGD initiative?**
- **What are the key-challenges facing the OGD initiative in the State of Qatar? And what are their plans to overcome them?**

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- **How is OGD perceived in light of other IT priorities and practices?**

- **What strategies will Qatari authorities adopt to sustain and enrich OGD practices in the future?**

4.0 Research methodology

The essential focus of this paper is to survey the implementation of Open Government Data (OGD) concepts and practices in one of the developing country in the Middle East region namely the State of Qatar to realize more transparent, accountable, and effective government.

This research expresses an Open Government Data Success Model (OGDSM), that will be implemented and applied in the context of the State of Qatar. The research examines the current status of OGD in Qatar, to recognize the main driving forces behind the presentation of its OGD initiative to open up government data and information. It is followed by an analysis of the new approach adopted by Qatar to create and control its OGD program. Based on these findings and in-depth interviews with the government officials responsible for Qatar's OGD initiative, the research classifies the crucial challenges to the further advancement of OGD in Qatar. It concludes with observations and recommendations on how Qatar's OGD initiative can be improved, strengthened and sustained. It sets out recommendations for practical steps to be taken by Qatar to improve the accessibility of government assets of data and information, and thereby contribute to government transparency and openness.

The research uses qualitative methodology adopted rather than quantitative. It is suitable for like this research project because of its flexibility and depth although the qualitative

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approach is stared as less difficult. [3] In addition, it provides greater opportunity for a detailed analysis of Open Government initiatives. We design a methodology to answer all the research questions using both electronic and non-electronic libraries to collect the relevant information. The research questions require a social science viewpoint.

Academic publications such as textbooks, journals, and reports, as well as non-academic publications such as newspaper reports, blogs, and many websites are used to collect information.[4] The research advances recommendations for developing countries for better and more transparent government. These recommendations will be developed through two main research stages:

- In the first phase, a literature review is developed to explore the benefits of embraced Openness to be expanded to the community and country. This is achieved by discovering several theories such as the Social Justice theory, Human Rights theory, Economic theory, Innovation theory, and Public Good theory. After that, it includes a literature review conducted on OGD trends and practices in the developed world. Further, it encompasses an Open Government Data Success Model (OGDSM) based on OGD best practices in the United Kingdom and the United States.

- In the second phase, the research was divided into two segments. The first one utilized the Open Government Data Success Model (OGDSM) to analyze Qatar's current Open Government practices in comparison to its position in the leading developed countries, as well as to classify weaknesses and challenges specifically to Qatar. The second one involved conducting a survey to gather more detailed and up-to-date information about the OGD position in Qatar.

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[3] P Cane and H M Kritzer, *The Oxford handbook of empirical legal research* (Oxford University Press, USA, 2010).

[4] S B Coutin, 'Qualitative Research in Law and Social Sciences' (2012) *Scottish Journal of Arts, Social Sciences* 50.

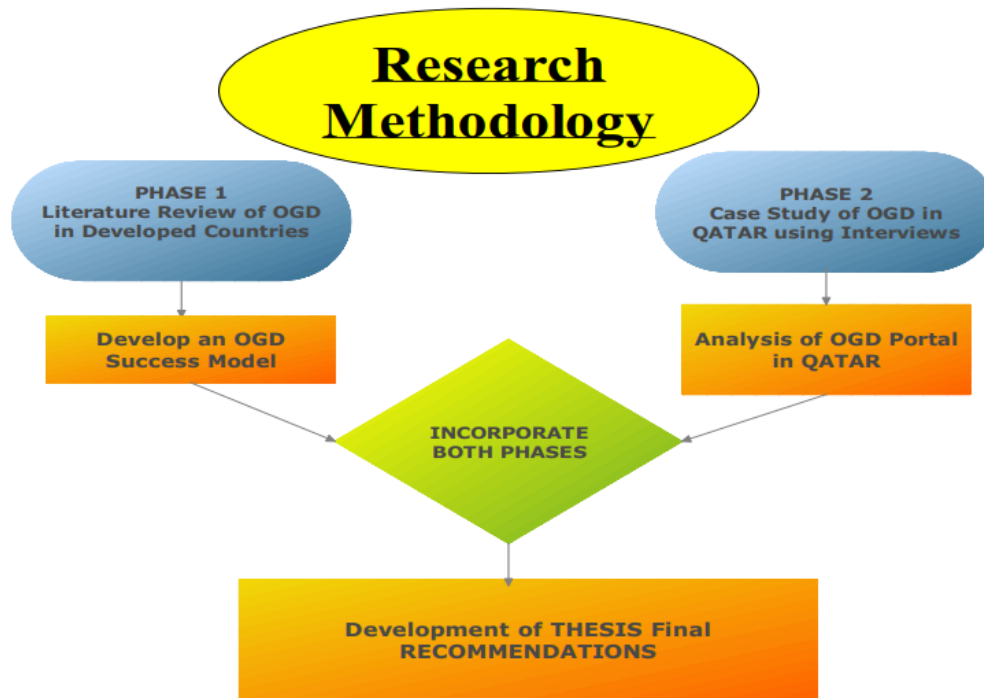The following figure shows the methodology used in research study conducting:

Figure 1: research methodology

5.0 Theoretical literature

Electronic Government is not restricted to the publication of information on a website to allow citizens to access to download application forms designed to achieve different government services such as filing a tax return and renewing a license.[5] During this paper, several key concepts and terms are used. At the beginning, these concepts and terms are introduced and defined.

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[5] S Bhatnagar, 'E-government and access to information' (2003) *Global Corruption Report.*

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Open Government: is a new evolving strategy applied to change the communication ways between governments and their citizens through networked technologies. It enables government to support citizens to solve persistent problems, and then achieve more effective institutions and a more robust democracy.[6]

Open Data: if data or information is available free of charge for everyone to access, use, reuse and redistribute without restrictions, data is called 'open'. Open word refers to data availability in both human-readable and machine-readable formats. If the government has produced data and information that are available to the public in accordance with Open Data principles, it is referred to as Open Government Data.[7]

Open Government Data: Open Government Data is information produced or commissioned by government that can be freely accessed, used, reused, and distributed by anyone in the country according to.[8] Openness and open access to data, knowledge and information has gained increasing support in the.[9] Open Access (OA) is the term coined to represent the removal of barriers to research.[10]

Web 2.0: a new wave of web-based applications that enable people to interact, collaborate, and share information online.[11] Web 2.0 provides online users with interactive services in which they have control over their data and information on the

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[6] Beth Simone Noveck, *Wiki government: how technology can make government better, democracy stronger, and citizens more powerful* (Brookings Institution Press, 2009).

[7] 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>.

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

[9] Ibid.

[10] P. Suber, 'Open access overview' (2009) 1(1) *Exploring Open Access: A Practice Journal*

[11] World Wide Web Foundation, *Open Government Data* <http://www.webfoundation.org/projects/ogd/>.

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web.[12] Examples of new Web 2.0 technologies including blogs, wikis, instant messaging, RSS, social bookmarking, and social networking websites.[13]

Open Government = Transparency + Efficiency + Participation + Accountability.[14]

Open Government Data (OGD) is the provision of public sector organizations to provide their own raw data in open-standard format and machine-readable to their citizens. This denotes a significant support in Open Government strategies. The community can use data and create new applications, as well as Non-Government Organizations (NGOs), developers and activists, can use these data to reproduce it in the form of newer services to citizens and organisations.[15]

Developing Countries: it is difficult to find a single definition of the term 'developing country'. The categorization in developed and developing countries as set by international organisations based on various factors and classification systems. The United Nations classifies countries based on income, education, healthcare, and life expectancy. On the other hand, the International Monetary Fund (IMF) categorizes countries into two major groups, namely advanced economies, and developing economies.[16] The World Bank defines developed countries as living standards to high-income countries and developing countries as low or middle-income countries compared with.[17]

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[12] H. Ajjan and R. Hartshorne, 'Investigating faculty decisions to adopt Web 2.0 technologies: Theory nd empirical tests' (2008) 11(2) *The Internet and Higher Education* 71.

[13] Ibid.

[14] World Wide Web Foundation, *Open Government Data* <http://www.webfoundation.org/projects/ogd/>.

[15] Ibid.

[16] International Monetary Fund, *World Economic Outlook Report* <http://www.imf.org/external/pubs/ft/weo/2012/01/pdf/text.pdf>.

[17] The World Bank, *How we Classify Countries* <http://data.worldbank.org/about/countryclassifications>.

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Qatar is a small developing country located in the middle part of the Persian Gulf in the Middle East. Qatar recognized its e-Government initiative in 2000 with the final goal of completely combined paperless government. Nowadays, Qatar is one of the leading countries in its region in terms of e-Government and transparency. However, many factors showed that the public adoption of online services in Qatar is still progressing.

The selection of Qatar as a case-study country to represent developing countries refers to the following reasons:

Qatar's e-Government project has been recognized as best practice in the West Asia region,[18] and the United Nations Global e-Government readiness report has ranked Qatar's e-Government as number 53 in the world.[19] Moreover, Qatar is the least corrupt country in the West Asia area. Throughout the Asian continent, Qatar is ranked fourth after Singapore, Hong Kong, and Japan. Worldwide, Qatar is ranked 22nd in Transparency International's global corruption index.[20]

6.0 Implementation

This section presents one of the main contributions of this paper, which is the Open Government Data Success Model. This model has been developed in the context of lessons learnt from Open Government strategies in countries including the United Kingdom, and the United States of America, which have been the leaders in this field. To understand the experience of these countries and seek to learn from them, it is important

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[18] 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>
[19] Ibid.
[20] Transparency International, *Corruption Perceptions Index 2012* <http://www.transparency.org/cpi2012/results>

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to formulate a roadmap for developing countries to reform their e-government systems for more open and, transparent government.

According to the analysis of recent developments in Open Government in developed countries, where the open government program added much of its momentum, this paper proposes an Open Government Data Success Model (OGDSM).[21] The OGDSM includes four core elements: -

- Top Level Support and Leadership Commitment: the support of the top decision-makers of the country both in the short run and in the long run to promotes the development of OGD and underpins its sustainability.

- Building a Double-tier IT Capacity (civil society and government): Civic engagement and public participation has to be refined, rather than taken for granted.

- Web 2.0 Involvement (Government 2.0): New and developing ways of social communication that have expanded approval in the broader community between government and citizens.

- Legal Infrastructure (FOI): a legal foundation that enables the public to attain access to data, while preservative the government's rights to own and manage its copyright interests.

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[21] Becky Hogge, 'Open data study' (2010) *a report commissioned by the Transparency and Accountability Initiative, available for download at: http://www. soros. org/initiatives/information/focus/communication/articles_publications/publications/open-data-study-20100519*
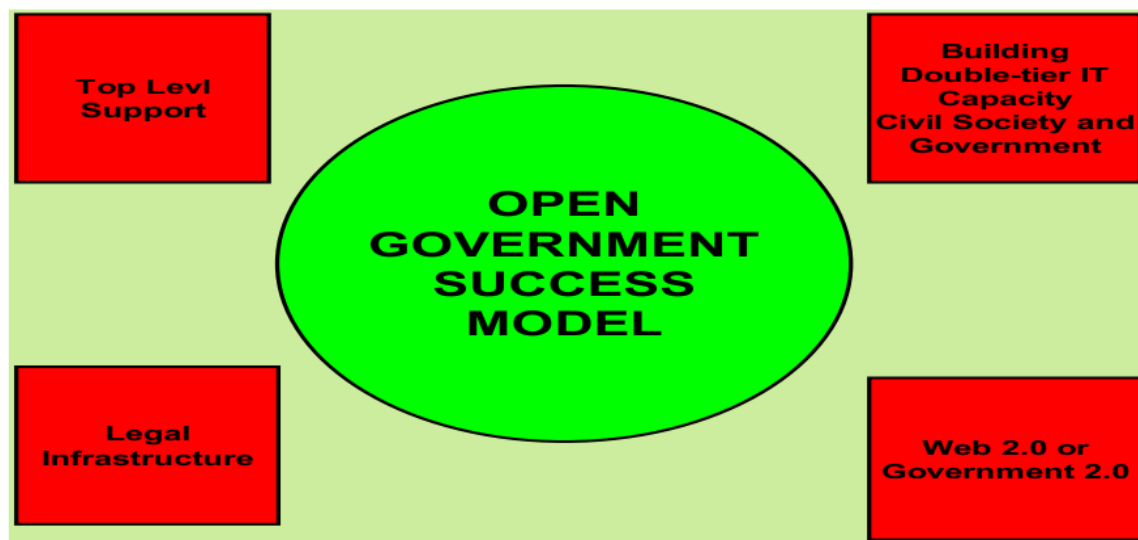
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Figure 2: Open Government Data Success Model (OGDSM)

This section studies the progression of Open Government initiatives in developing countries as well as the growth and progress of associated Web 2.0 technologies and applications in racing the Open Government program. Qatar is the case study that we examine its current experiences to conduct a web survey of 'Open Government' initiatives, to understand the insinuations and the possible of applying a complete Open Government in Qatar.

Reviewing the outcome of various ICT-enabled projects on developing countries is of inordinate reputation especially if we reflect that, according to the United Nation's Population Division; the world population is anticipated to reach 9.6 billion by 2050.[22]

Qatar is one of the principal countries in the Western Asia region in terms of eGovernment and transparency. The transformation of the ICT-based public-sector

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[22] Population Division United Nations, *United Nations Raises Projected World Population*
<http://www.prb.org/Publications/Articles/2013/un-world-projections.aspx>.

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environment has happened during the sequence of the last three decades, with variable degree of success. Qatar established its e-Government initiative in July 2000 with the goal of becoming a completely combined, paperless government, and to accomplish the highest performance in implementing governmental communications automatically, through efficient business measures and combined information technology solutions. The initiative started with a experimental project to reintroduce resident licenses. Three government parties were involved in the pilot, namely, the Ministry of Interior as service provider, Qatar National Bank as a payment gateway facilitator for that service, and Qatar Central Bank as a host of the e-government pilot project system.

After the successfully implementing the pilot project, complete government sustenance was specified to the valuation of all ministries and public-sector organizations for the second phase of the project to provide all government services to use electronic transactions.[23] The vision of the Qatari e-government initiative was 'Qatar online services, anytime, anywhere, to provide government transactions, information and knowledge'.[24]

In 2004, ictQATAR was recognized to accomplish and advance Qatar's overall ICT plan, including ICT infrastructure, service delivery, and regulation of public services.[25] It controlled and accelerated development in following years as equivalent agendas were presented in key fields such as health, interior affairs, and education. IctQATAR advanced a planned strategy to implement an combined government program to provide

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[23] 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.
[24] Al-Shafi and Weerakkody, above n 470.
[25] Ibid.

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an ICT empowered situation through regulation and strategies relating to security and data protection.[26]

The information obtained in answering questions was mainly composed through straight interviews with the Qatari government officials responsible for the OGD initiative, and through detailed reviews of the status of Qatar's OGD portal.

Follow-up email interviews were also directed to gather the modern information and new updates. The discussion and findings on these questions are presented below based on an analysis of the response from the government officials, in light of a more evaluation of the present online OGD portal.

- **What's the current status of OGD in Qatar?**

Various data sets are available either in PDF or WORD format; while according to the definition of OGD by Europe's Digital Agenda,[490] PDFs cannot be considered as open data based on their presentation and reusability problems. Furthermore, according to Sir Tim Berners-Lee, PDF records score only one star in his five stars Open Data deployment scheme.

- **What are the key driving forces for opening up government in the State of Qatar?**

Mr. Yazen Alsafi, Service Delivery Section Manager of Qatar's e-Government at ictQATAR, answers that there are two core drivers behind the newest actions to opening up government and revealing interior government data to the outdoor world.

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[26] 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>.

o "The whole global movement towards opening up government data in the developed world starting from US, UK, and led partly by UN in the recent creation of the Open Government Partnership in 2011."

o "The other factor is the existing competition amongst members of the Gulf Cooperation Council." (GCC: which is a political and economic union of Arab states bordering the Persian Gulf, namely Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates)."

- **What approach has Qatar followed to initiate and manage OGD initiative?**

According to Mr. Yazen Alsafi, Service Delivery Section Manager of Qatar's e-Government at ictQATAR, the first step included the Ministry of ICT 'is to work on Open Data policy and classifying the owners and stakeholders in the e-Government Transformation strategy'. He added that "a guiding strategy for OGD has not yet been finalised, as the Qatar Statistics Authority has the mandate to access the data and 'most likely, they'll be the one owning this project, while MICT (Ministry of ICT) shall act as technology tanks'.

On the other hand, according to Mr. Mansoor Ahmed Al Malki, the Director of the Information Technology Department at the Statistics Authority, Qatar's approach so far has provided data on a distinct portal called *Qalm* owned and managed by the Statistics Authority, which is the core government organization responsible for working it. IctQATAR's role is restricted to that of a organizer, as it just offers a connection to the data portal from Qatar's e-Government portal, *Hukoomi*. Mr. A Malki also said that 'according to the current amiri (royal) mandate, the Statistics Authority is fully authorised to request information from any agency or government body'. All available and accessible government data is located and warehoused in the national portal *Qalm*, which plays as a warehouse for all the open-to public government information.

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- **What are the key challenges facing the OGD initiative in State of Qatar? And what are the plans to overcome them?**

As stated by Mr Yazen Alsafi, the Open Data initiative is still very restricted in the Qatar because the lack understanding of the concept of Open Data: 'Many government agencies are yet to grasp the meaning and lack the understanding of the importance of Open Data', Based on his current work on the project and the conceptualisation of the Open Data policy, Mr. Alsafi perceives that the 'very few government agencies who understand it, perceive it as a threat'. He traits this to the conventional attitude that still occurs largely in Qatar in relative to OGD.

Furthermore, Mr Alsafi added declares that 'transparency as a value has not yet been the focus of many government agencies in Qatar, which is one of the most important values in the whole concept of OGD initiatives worldwide'. He also mentioned the lack of a rich vision concerning possession of the development and accountability for the Open Data platform. Mr Alsafi increases the significance of question of 'who the real owner should be, Qatar Statistics Authority, Council of Ministries, or the Ministry of Information and Communication Technology (MICT, formerly known as ictQATAR)?'. He remarks that 'this should be resolved once the e-Government Transformation Strategy gets approved with the owner clearly identified'.

- **How is OGD perceived in light of other IT priorities and practices?**

According to Mr Yazen Alsafi and Mr Al Malki, numerous government institutions absence well-versed awareness of what it would lead to announcement their interior government data and information to the outdoor world. Various reflect unused time, missing any advantage, or even as a danger to their processes. Both officers highlighted the significance of teaching and awareness meetings to rise up the degree of perception.

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Stakeholders from the public and private areas must be besieged to improve mindfulness stages of Open Data's welfares to the civilization, and to the country as a whole. Qatar has not yet practiced engaging the Open Government Partnership (OGP), and no present strategy or suggestion to do so. Though, growths in countries that have controlled the method in OGD, such as the United States and the United Kingdom, as well as the EU's Digital Agenda for Europe, and current global partnerships are measured as very important bases of practice for many developing countries. Qatar should not reject itself from these opportunities, taking stated its devotion to openness and transparency. To learn from the ground-breaking practices of countries in the developed world without ignoring and considering the resident situation is a central method for Qatar to progress more fruitful Open Data experiences.

- **How will Qatari authorities sustain and enrich OGD practices in the future?**

Mrs Serene Fung Ying Ho, Government Policies and Standards Manager at the Ministry of Information and Communication Technology (MICT), established that the following stage to be approved in Qatar is the recruiting of a strategy on Open Data. She highlighted that considering a pure managerial strategy would increase the development of Open Data applies and rise community contribution. She additionally clarified that 'we are now in the final stages of our draft policy, which will be issued for public consultation soon'. Mrs Ho also declares that conducting discussions on the strategy would grow the degree of public participation and improve the public's mindfulness of Open Data.

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7.0 Conclusion

In conclusion, applying openness in government and permitting better community access to government data and information would not only improve transparency, but is also a precondition to accomplish the aims of Qatar's determined National Vision 2030.

The study summarizes by recommending Qatar increase its public participation as well as growing the poor degrees of openness and transparency in its economic actions, for a improved and enhanced practice of OGD by its inhabitants.

The main recommendations are as follows:

- Recommendation 1: Development of an Open Government Data Strategy

- Recommendation 2: Formulation of an Open Government Data Framework

- Recommendation 3: Development of a Legislative Framework for the Knowledge Society (The Legislation Gap)

- Recommendation 4: Building an Open Data Community

- Recommendation 5: Strengthening the use of Web 2.0 Technologies

This study has required to donate to the area of Open Government Data in the context of developing countries, specifically in the State of Qatar. It has studied Open Government initiatives in the developed world, conducted a case study of OGD in Qatar, and expressed a set of recommendations that can help as a basis for future investigation on Open Government in other developing countries.

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