E-GOVERNMENT READINESS IN THE OIC MEMBER COUNTRIES

INTRODUCTION

Today we are living in an era of speed caused by the technological progress of mankind which has a deep impact on each and every process in both the public and private sector. This impact has even been felt in the most remote geographical areas of the world due to the widespread use of information and communication technology (ICT) tools. These technologies are adopted by the governments to transform the public policy, processes and functions to better serve the needs of their citizens.

Sound infrastructure, improved web technology, and trained human capital have made it possible for the governments to attain a high level of on-line public services. However, in order for governments to maintain a sustainable growth in the use of e-government services and to reach the citizen satisfaction level, it is imperative for them to consolidate these unattached services under an integrated e-government system. The integrated e-government system available round the clock undoubtedly will tie agencies, processes and systems together in a more efficient and faster way.

E-GOVERNMENT READINESS PERFORMANCE OF THE OIC MEMBER COUNTRIES

This section presents an overview of the OIC Member Countries in e-government readiness which is measured by taking the E-Government Readiness Index into consideration. The e-government readiness index is a composite index comprising 3 sub-indices; the web measurement index, the telecommunication infrastructure index and the human capital index[1]. As shown in Figure 1, the average OIC e-government readiness is 0.34 in 2007. It is below World average of 0.45 in the same year. It is also less than the averages of other regions, except the average of Africa.
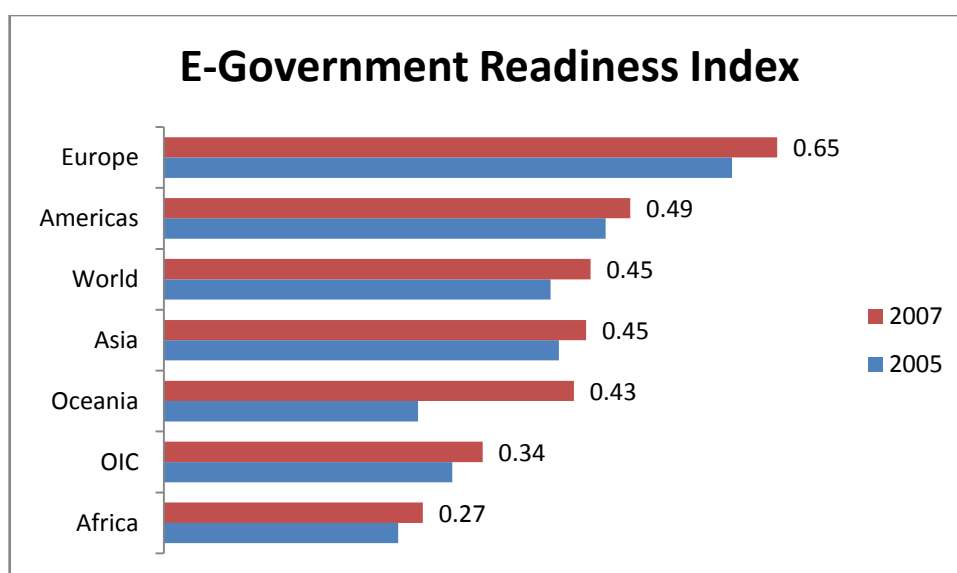

Figure 1: E-Government Readiness Index by Regions (2005-2007)

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[1] See "UN e-Government Survey 2008", p 14.

Figure 2 shows the top 10 OIC Member Countries ranked by the e-government readiness index. Except Lebanon and Turkey, all the other Top 10 Ranking OIC Member Countries improved their positions in the period 2005-2007. Egypt is the only country in the Top 10 to move up 20 positions from its 2005 rank. Egypt appears to have put tremendous effort into developing its e-government programme in the said period. In the same period, Jordan and Kuwait showed somewhat similar performance with that of Egypt. However, the same group of countries still need to enhance their efforts to reach the level of United Arab Emirates, which scored 0.63 in e-government readiness global ranking index. Yet, even as the lead country in the OIC in e-readiness index, United Arab Emirates ranks 32nd in e-government readiness global ranking index.
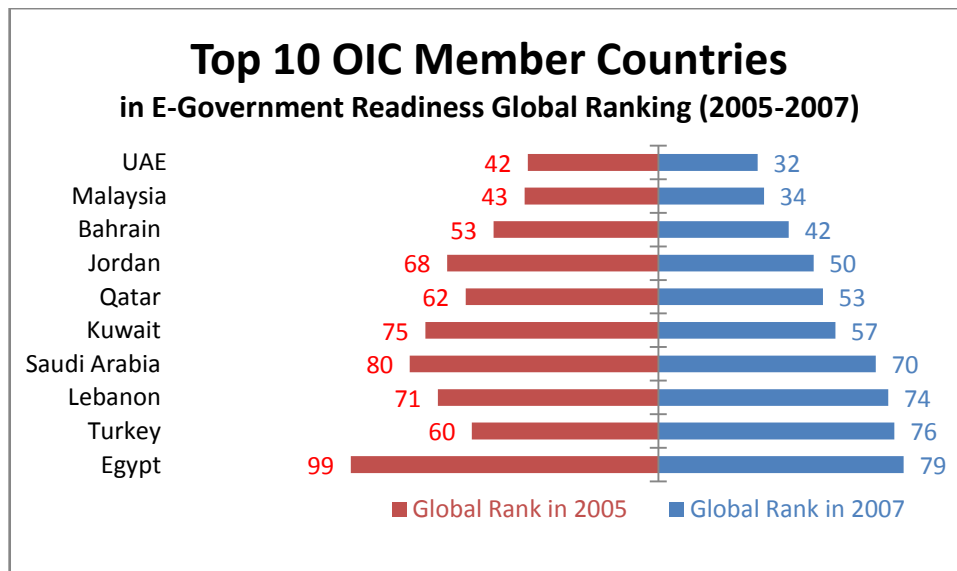
Top 10 OIC Member Countries
in E-Government Readiness Global Ranking (2005-2007)

Country	Global Rank in 2005	Global Rank in 2007
UAE	42	32
Malaysia	43	34
Bahrain	53	42
Jordan	68	50
Qatar	62	53
Kuwait	75	57
Saudi Arabia	80	70
Lebanon	71	74
Turkey	60	76
Egypt	99	79

Figure 2: Global E-Government Readiness Rankings of Top 10 OIC Member Countries

Achieving high rankings in the e-government readiness index requires robust broadband network, high market penetration rates of mobile communication means and applications, well-trained human resources and consolidated administration of disperse but attached e-government applications. Shortcomings faced in the fulfilment of those requirements cause the discrepancies between the regions.

In 2007, the OIC average in the e-government readiness global index is below World average by 0.11. In the same year, the differences in the scores of Sweden (0.92), best performing country in e-government readiness global index, and United Arab Emirates (0.63) is approximately 0.29. This shows that even the top performing OIC Member States in e-government readiness index needs to take additional measures in enhancing their e-government services and processes.

Figure 3 shows the OIC Member Countries in terms of their performance changes in Global E-Government Readiness Index Rank from year 2005 to year 2007. Of the 55 OIC Member Countries for which data is available, only 22 managed to increase their positions from 2005 to 2007. In 2007, as opposed to other regions, in the MENA and South Asia, strong performing OIC countries appear to be more in number than the weak performing ones. 11 out of 18 OIC Member Countries in the MENA and 3 out of 4 OIC Member Countries in the South Asia managed to increase their year 2005 ranks in year 2007. All Member Countries in the Latin America & Caribbean, 16 out of 20 in the Sub-Saharan Africa, 5 out of 8 in the Europe & Central Asia and 2 out of 3 in the East Asia & Pacific weakly showed a weak performance in year 2007 when compared to their year-2005 ranks.
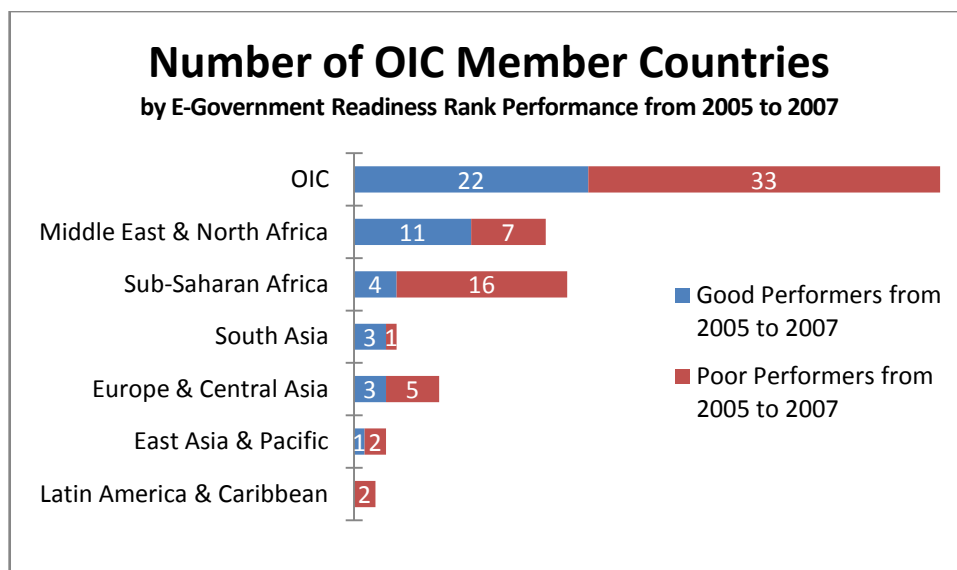
Number of OIC Member Countries
by E-Government Readiness Rank Performance from 2005 to 2007

Region	Good Performers	Poor Performers
OIC	22	33
Middle East & North Africa	11	7
Sub-Saharan Africa	4	16
South Asia	3	1
Europe & Central Asia	3	5
East Asia & Pacific	1	2
Latin America & Caribbean		2

Legend: ■ Good Performers from 2005 to 2007 ■ Poor Performers from 2005 to 2007

Figure 3: Number of Good/Poor Performers by E-Government Readiness Rank Change between 2005 and 2007

WEB MEASUREMENT INDEX

The web measurement index looks at how governments are providing e-government policies, applications and tools to meet the growing needs of their citizens for more e-information, e-services and e-tools. It measures the online presence of national websites, along with those of the ministries of health, education, welfare, labour and finance of the country[2]. The web measurement index considers a five-stage model[3], which builds upon the previous levels of complexity of a government's online presence. The main online presence is the national portal or the official government home page. The other online presence sites for Ministries/Departments of Health, Education, Social Welfare, Labour and Finance, have also been taken into consideration. If governments can meet the threshold points for infrastructure development, content delivery, business re-engineering, data management, security and customer management, they move up from one stage to another in the model. Thus, the web measure index shows the ability of governments to deliver online services to their citizens. Figure 4 shows that the average OIC web measurement index slightly increased from 0.20 in 2005 to 0.24 in 2007 as more OIC Member Countries invested in infrastructure development, citizen-friendly portals, online applications and back office[4] integration. The OIC as a whole achieved the highest index value leap from 2005 to 2007 with a 0.04 point increase. Except the averages of the World, Europe and Oceania; all the other regions managed to increase their web measurement index values from 2005 to 2007.

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[2] see "UN e-Government Survey 2008", p 43.

[3] Stage I – Emerging, Stage II – Enhanced, Stage III – Interactive, Stage IV – Transactional, Stage V – Connected

[4] Back office functions are defined as those areas that support front line delivery of services. See "UN e-Government Survey 2008", p 126.
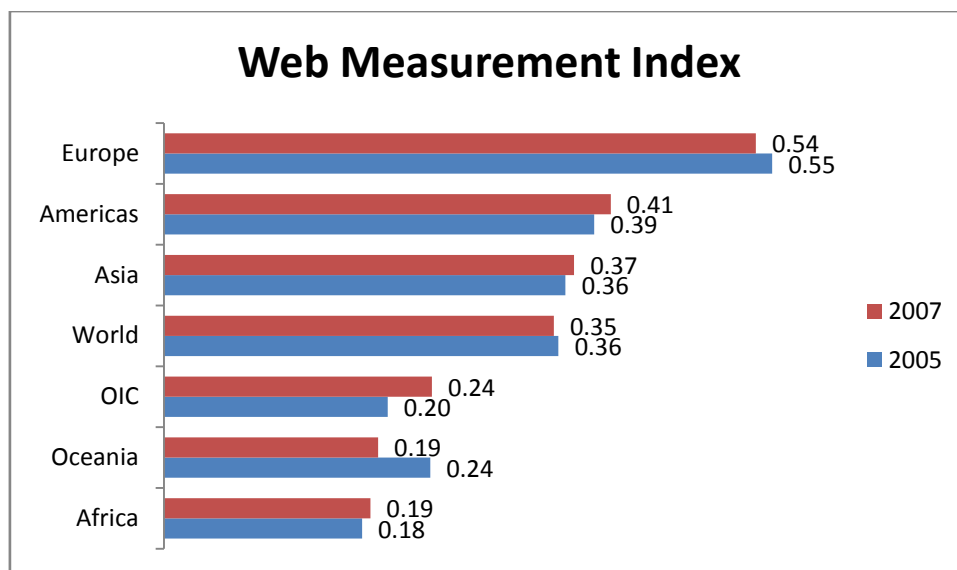
Figure 4: Web Measurement Index by Regions (2005-2007)

Figure 5 shows the top 10 OIC Member Countries ranked by the web measurement index with United Arab Emirates leading the index followed by Malaysia. The United Arab Emirates and Malaysia went up mostly due to the strength of three of their ministries' websites, namely: Social Welfare, Labour and Finance[5]. With 7 countries in the top 10 List, the MENA is the leading region in the web measurement index. Malaysia, Pakistan and Turkey which are the other top10 ranked OIC Member Countries in the said index belong to the regions of East Asia & Pacific, South Asia and Europe & Central Asia, respectively. None of the OIC member countries in the Latin America & Caribbean and Sub-Saharan Africa regions managed to get in the Top 10 Web Measurement Index Ranking. Except Pakistan and Turkey, the other OIC Member Countries in the Top 10 Rank List improved their positions from year 2005. Among the ones which improved their positions in 2007, Oman withdraws attention as it moved up 76 positions from its 2005 rank. In 2007, the OIC average in the e-government web measurement global index is below that of World average by 0.11 points. On the other hand, in the same year, when the scores of Denmark, best performing country in e-government readiness index, and that of United Arab Emirates are compared with each other, their difference becomes approximately 0.28 points. At the national level, there is room for more OIC countries to achieve a better performance in web measurement index.

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[5] see "UN e-Government Survey 2008", p 44.

Figure 5: Global Web Measurement Rankings of Top 10 OIC Member Countries

Figure 6 shows the number of OIC Member Countries in terms of their Global Web Measurement Index Rank changes between 2005 and 2007. 22 out of 56 OIC Member Countries with available data increased their positions from 2005 to 2007. The remaining 34 of the Member Countries had a degraded performance. Except MENA all regions had more countries with moving down positions according to the 2007 rank list. As shown in Figure 6, 10 out of 18 OIC Member Countries in the MENA increased their year 2005 ranks in year 2007. All Member Countries in the Latin America & Caribbean, 15 out of 21 of the OIC Member Countries in the Sub-Saharan Africa, 5 out of 8 of the OIC Member Countries in the Europe & Central Asia, 2 out of 3 of the OIC Member Countries in the East Asia & Pacific, and half the OIC Member Countries in the South Asia weakly performed in year 2007 when compared to their year 2005 ranks. In 2007, nearly one-third of the weakly performing OIC countries appear to be from the Sub-Saharan Africa region.
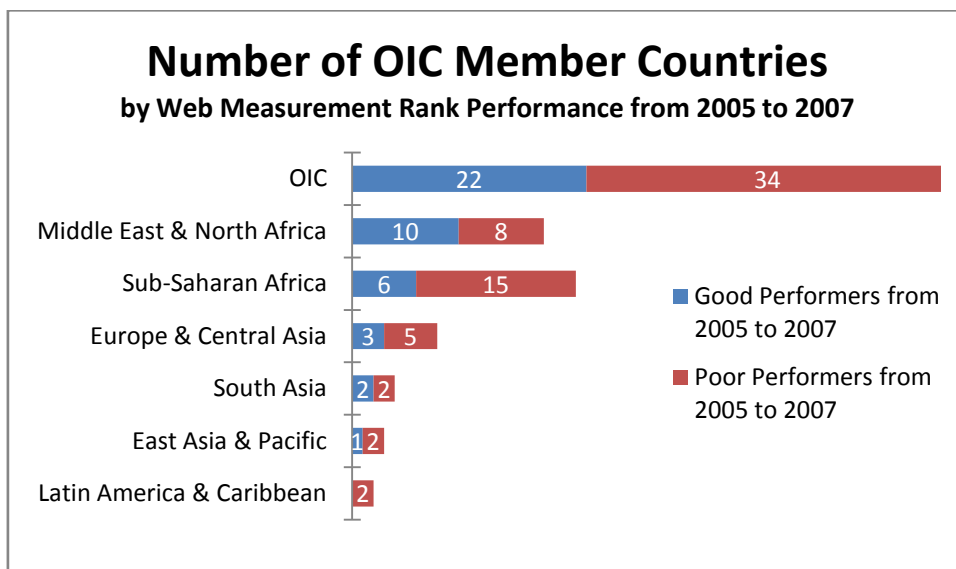

Figure 6: Number of Good/Poor Performers by Web Measurement Rank Change between 2005 and 2007

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Government sites enable the governments to provide the citizens with the services they need. A further step in this process would be to streamline government services under a single portal. Many countries, including OIC countries, have difficulty in reaching high scores in the Web Measurement and Telecommunication Infrastructure indices which prevent them to realize e-transformation. Thus, countries which will outperform their benchmark in web measurement index will be in a better position to provide state-of the-art services to its citizens in e-government.

In recent years the mankind has witnessed significant improvement in the adoption of (ICT). This led to an increase in the number of Telephone Lines, PCs, Mobile subscribers which all had a considerable impact in Internet growth. According to ITU data[6], between 1991 and 2003 telephone lines doubled and the availability of personal computers grew fivefold. In the last 12 years, cellular subscribers increased by 83 times while the increase in world Internet users was a whopping 151 times. In the last few years there was exceptional growth in the use of the Internet among all regions of the world and especially in the developing regions. The Telecommunications Infrastructure Index was constructed as a composite measure of PCs, Internet Users, Telephone Lines, Mobile subscribers and Broadband per 100 relating them to a country's infrastructure capacity as they relate to the delivery of e-government services and assigns each variable a 20% weight[7].

As with the same trend in Web Measurement Index, the OIC average Telecommunications Infrastructure Index has slightly increased from 0.07 in 2005 to 0.10 in 2007 (Figure 7). Despite the OIC as a group showed improvement in the said period in the Telecommunications Infrastructure Index, their average score is still behind that of the World average. Only the averages of Europe and Americas have surpassed the World average.
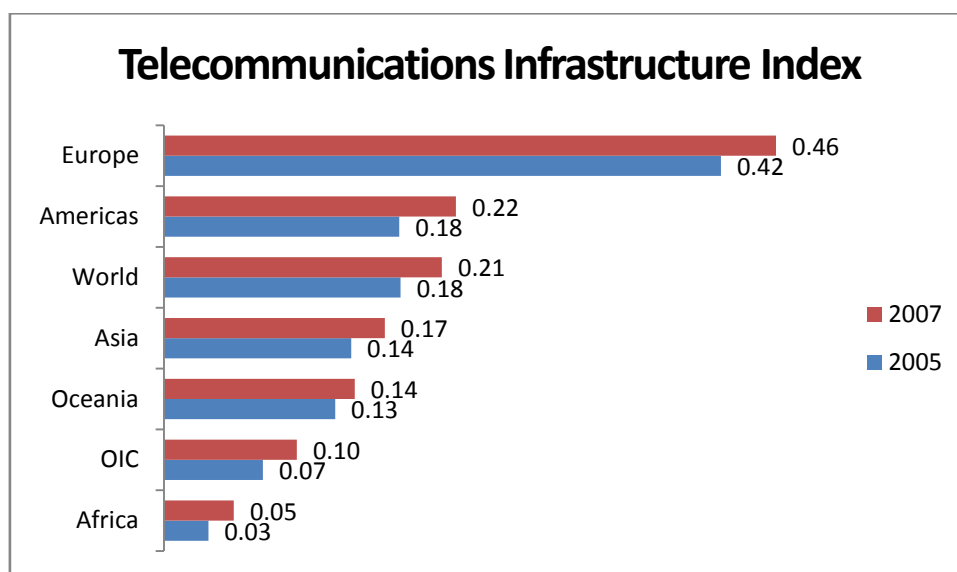

Figure 7: Telecommunications Infrastructure Index by Regions (2005-2007)

Figure 8 shows the top 10 OIC Member Countries ranked by the telecommunications infrastructure index with United Arab Emirates as the index leader in the whole OIC. With 6 countries in the top 10 List, the MENA is the leading region in the telecommunications infrastructure index. Malaysia, Brunei, Turkey and Maldives which are the other OIC Member Countries to have taken place in the top 10 Telecommunications Infrastructure Rank List are from the regions of East Asia & Pacific (the first two), Europe & Central Asia and South Asia, respectively. . None of the OIC member countries in the Latin America & Caribbean and Sub-

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[6] ITU World Telecommunication Indicators, 2003 projected figures.
[7] see "UN e-Government Survey 2008", p 219.

Saharan Africa regions took a position in the top 10 Telecommunications Infrastructure Index Ranking. Except Maldives, the other OIC Member Countries in the top 10 Rank List couldn't improve their positions from year 2005. Turkey and Saudi Arabia preserved their positions in 2007. Maldives is the only country in the top 10 to move up 28 positions from its 2005 rank.. In 2007, the OIC average score in the e-government telecommunications infrastructure global index is below that of World average by 0.11 points. On the other hand, in the same year, when the scores of The Netherlands, best performing country in e-government telecommunications infrastructure index, and United Arab Emirates are matched, it becomes approximately 0.43 points.

Figure 8: Global Telecommunications Infrastructure Rankings of Top 10 OIC Member Countries

Figure 9 shows the number of OIC Member Countries in terms of their Global Telecommunications Infrastructure Index Rank changes in the period 2005-2007. 26 out of 56 OIC Member Countries with available data increased their positions from 2005 to 2007. The remaining 30 of the Member Countries showed a weak performance. All regions except Sub-Saharan Africa and South Asia had more OIC countries with positions moving down than the ones with positions moving up in the 2007 rank list. All OIC Member Countries in the South Asia and 13 out of 21 of the OIC Member Countries in the Sub-Saharan Africa increased their year 2005 ranks in year 2007. All OIC Member Countries in the Latin America & Caribbean and East Asia & Pacific, 11 out of 18 of the OIC Member Countries in MENA and 6 out of 8 of the OIC Member Countries in the Europe & Central Asia had weakly performed in year 2007 when compared to their year-2005 ranks. The success of the OIC countries in Sub-Saharan Africa is mostly based on increasing number of PCs per 100 persons and the big increase in cellular phone penetration.
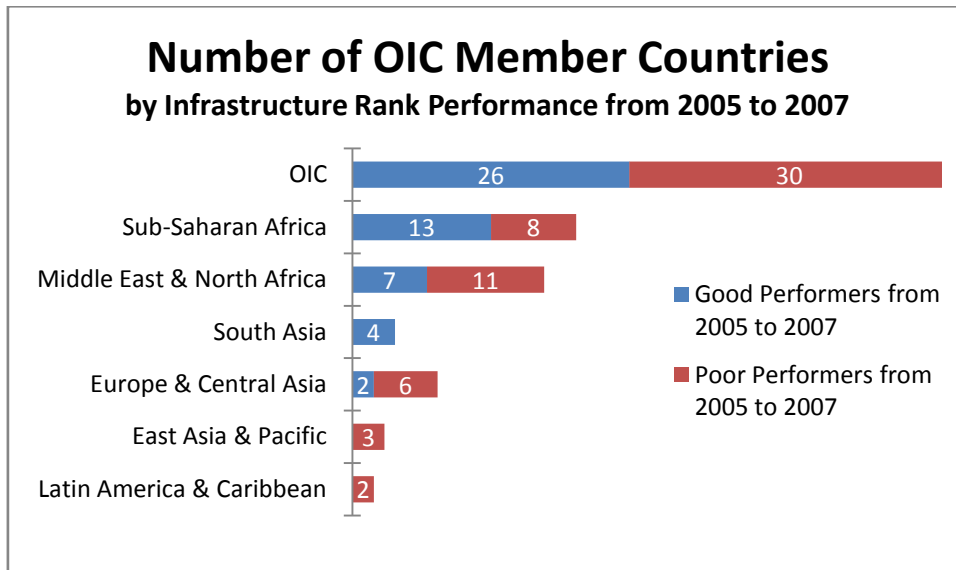

Number of OIC Member Countries
by Infrastructure Rank Performance from 2005 to 2007

Region	Good Performers	Poor Performers
OIC	26	30
Sub-Saharan Africa	13	8
Middle East & North Africa	7	11
South Asia	4	
Europe & Central Asia	2	6
East Asia & Pacific		3
Latin America & Caribbean		2

■ Good Performers from 2005 to 2007
■ Poor Performers from 2005 to 2007

Figure 9: Number of Good/Poor Performers by Telecommunications Infrastructure Rank Change between 2005 and 2007

HUMAN CAPITAL INDEX

The human capital index is a composite of the adult literacy rate and the combined primary, secondary and tertiary gross enrolment ratio, with two thirds weight given to the adult literacy rate and one third to the gross enrolment ratio[8]. The Human Capital Index also helps us to see to what extent the citizens of the OIC Member Countries are ready for e-transformation and how much the OIC Member Countries invested in the education of their citizens to embrace the e-government transformation process in the fast moving digital age.

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[8] see "UN e-Government Survey 2008", p 17.

As shown in Figure 10, the OIC average of Human Capital Index increased from 2005. Despite the fairly minor improvement in their score, the OIC group as a whole is still behind the World average. Unlike the average of OIC and Africa, the averages of Europe, Americas, Oceania and Asia have surpassed the World average.

Figure 11 illustrates the top 10 OIC Member Countries ranked by the human capital index with Kazakhstan leading the index. With 7 countries in the Top 10 List, the Europe & Central Asia is the leading region in the human capital index. Guyana, Brunei and Libya are the other OIC Member Countries from the regions of Latin America & Caribbean, East Asia & Pacific and MENA, respectively taking place in the top 10 Human Capital Rank List. None of the member countries in the South Asia and Sub-Saharan Africa regions took a position in the top 10 Human Capital Index Ranking. Except Kazakhstan and Guyana – the only country from Latin America & Caribbean to enter the top 10 List – the other OIC Member Countries in the top 10 Rank List couldn't improve their positions from year 2005. In 2007, the OIC average in the e-government human capital global index is below that of World average by 0.12 points. On the other hand, in the same year, Australia, Denmark, Finland and New Zealand appear to have the highest scores in the e-government human capital global index with 0.9933 each. When the scores of these countries are matched with that of Kazakhstan, the difference in their scores is only about 2 points.
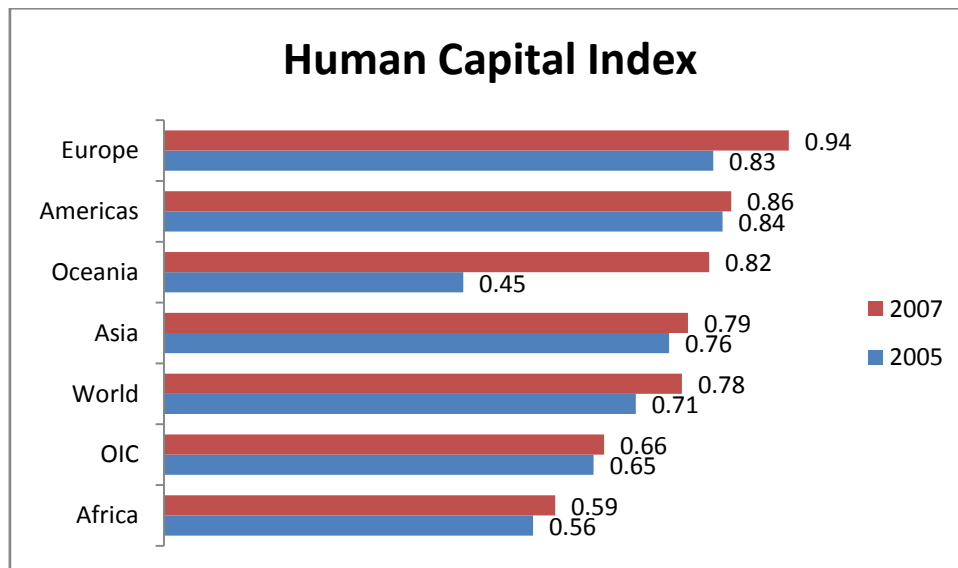

Figure 10: Human Capital Index by Regions (2005-2007)

Top 10 OIC Member Countries
in Human Capital Global Ranking (2005-2007)

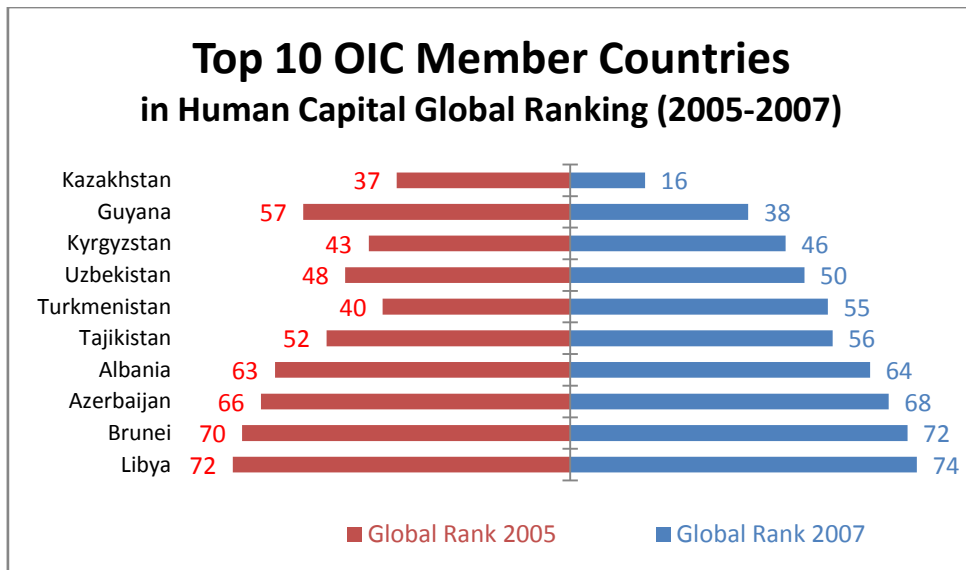| Country	Global Rank 2005	Global Rank 2007
Kazakhstan	37	16
Guyana	57	38
Kyrgyzstan	43	46
Uzbekistan	48	50
Turkmenistan	40	55
Tajikistan	52	56
Albania	63	64
Azerbaijan	66	68
Brunei	70	72
Libya	72	74

Figure 11: Global Human Capital Rankings of Top 10 OIC Member Countries

Figure 12 shows the number of OIC Member Countries in terms of their Global Human Capital Index Rank changes in the period between 2005 and 2007. 13 out of 55 OIC Member Countries for which the data are available increased their positions from 2005 to 2007. The remaining 42 of the Member Countries did not succeed in improving their performance. All regions except Latin America & Caribbean had more countries with positions moving down than the ones with positions moving up in the 2007 rank list. 1 out of 2 OIC Member Countries in the Latin America & Caribbean increased its year-2005 rank in year 2007. All OIC Member Countries in the South Asia, 18 out of 20 Member Countries in the Sub-Saharan Africa, 10 out of 18 OIC Member Countries in MENA, 7 out of 8 OIC Member Countries in the Europe & Central Asia and 2 out of 3 OIC Member Countries in East Asia & Pacific and had poorly performed in year 2007 when compared to their year-2005 ranks.
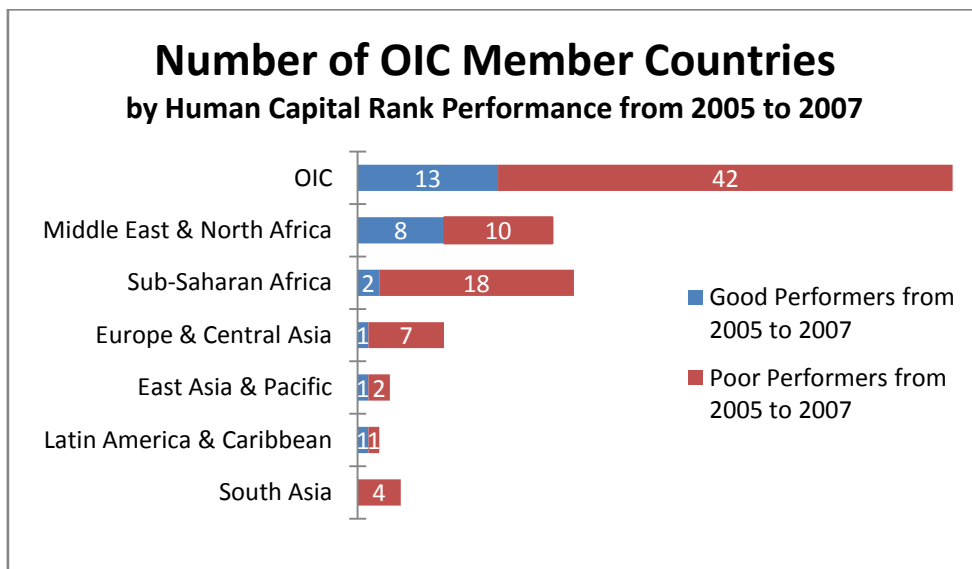

Number of OIC Member Countries
by Human Capital Rank Performance from 2005 to 2007

Region	Good Performers from 2005 to 2007	Poor Performers from 2005 to 2007
OIC	13	42
Middle East & North Africa	8	10
Sub-Saharan Africa	2	18
Europe & Central Asia	1	7
East Asia & Pacific	1	2
Latin America & Caribbean	1	1
South Asia		4

Figure 12: Number of Good/Poor Performers by Human Capital Rank Change between 2005 and 2007

Although there is notable improvement on average in e-government readiness index of the OIC countries in the period 2005-2007, there remains to be much done at the national lever to achieve higher scores in OIC average in e-government readiness index and to reach a level above the World average. Consequently, governments need to ensure that e-government is used effectively

by government agencies, staff, citizens, and businesses. However, to ensure sustainability of the e-government programs in the OIC countries, governments must develop policies that invest in human capital. This will also enhance the capacity of public agencies and enable public administrations to deliver e-government services to the citizens in a more efficient and timeless way.

CONCLUSION AND RECOMMENDATIONS

The origins of e-government stem from the usage of Internet as a platform for new organisational structuring and as a medium for public services dissemination. In this regard, the rapid technological revolution withdraws the attention of the decision-makers to improve the public sector performance. E-readiness not only plays a critical role in the lives of citizens, business community, government employees and government agencies as it creates interaction among them but also helps them benefit from government services in a transparent, efficient and a timeless way. Initiatives taken on E-readiness will be instrumental in preparing societies to adapt to the changes in this rapidly moving digital age. In order to benefit from the advance of technology on a broader scale, governments need to invest in human capital, implement e-government programs that are oriented towards promoting the use of ICT, enhance ICT infrastructure and create the necessary regulatory framework for employing next generation networks. This will promote the use of Internet and help create information societies which will participate more actively in rapidly evolving local and global economy. Countries which lack an appropriate infrastructure for promoting ICT use, have a weak legal and regulatory framework to make ICT work for a wider segment of the society, and lack the necessary human capital are likely to face challenges in the evolving digital economy and thus have great difficulty in achieving transformation to e-government. Therefore, it is necessary to meet the challenges in e-government services which will lead to creating a transparent economy in which the government provides e-services to the citizens on a single portal and enable them to complete their transactions online with satisfaction.

The OIC Member Countries as a group increased their E-Government Readiness Index slightly from 0.31 in 2005 to 0.34 in 2007. Although the OIC average index value is still less than the World Average, it is an undeniable fact that the e-government transformation requires sustainable development and sound economic structure to which most of the OIC Member Countries have hard time in reaching. The three components of the E-Government Readiness Index; indices of Web Measurement, Telecommunication Infrastructure and Human Capital have a shown a slight increase in the case of OIC as a group in the period between 2005 and 2007.

OIC Member Countries in the MENA, Europe & Central Asia and East Asia & Pacific regions have taken the Top 10 positions in the assessments. Despite this fact; for all sub-indices of the E-Government Readiness Index, the number of OIC Member Countries which failed to improve their ranks in the 2005-2007 period is more than the number of OIC Member Countries succeeded in improving their ranks in the same period. The main reason for this is the ever-changing nature of the technology which requires the financial capacity to acquire the latest innovations and high calibre human resources to implement them in the e-government transformation. It should be remembered that an e-government portal which seemed unique in 2005 could become an ordinary and average portal in 2007 unless the most recent trends in transaction based secure applications and citizen-friendly portal interfaces are adopted.

It is noteworthy to mention that that although OIC countries in the MENA region mainly occupy the top 10 OIC rank list in the first two indices, Human Capital top 10 OIC rank list mainly consists of countries from Europe & Central Asia. As the OIC countries in Central Asia posses strong human capital, they are likely to maintain a sustainable growth in e-government services if the e-government programs successfully overcome the challenges in the other indices. In general, human capital index appears to be a formidable challenge for most OIC countries. Thus, those OIC countries which achieved relatively high scores in human capital index appear to

be at a very advantageous position with respect to other. As a fact, when the population's level of education and skills increases, the population is more likely to access and use modern ICT technologies at increasing rates to facilitate their daily activities. In particular, the OIC Sub-Saharan African countries are lagging in Human capital scores in comparison to other regions and in the case of Web Measurement show a relatively weak performance compared to other regions, thus when such facilitation is achieved at the OIC level, this will also bring greater economic benefits and public sector efficiency as well as strengthen prospects of e-government in those countries. The strikingly low scores in Internet and Broadband in the Sub-Saharan African countries point out to inadequate telecommunications infrastructure in e-government services.

Although only 2 OIC countries in Sub-Saharan Africa improved their rank positions in e-government human capital index in 2007 compared to 2005, the scores of OIC Sub-Saharan African countries remained in the range between 0.25 and 0.81 which point out that intensive work towards enhancing prospects in education have been ongoing for some time in those countries but more recently has been showing poor performance. On the other hand, a reverse situation holds for the same countries in e-government infrastructure index as their scores in that index appear to be very low in spite of the fact that half of the strong performing OIC countries come from that region. All in all, OIC countries in Sub-Saharan Africa have comparatively weak performances in human capital yet they will not be severely handicapped by this outcome if they take adequate action to use their human capital for achieving a desired outcome in e-government services. This can be accomplished if those countries reverse the falling performance in human capital index. In fact, growth in the demand for Cellular and Main Telephone Lines in Sub-Saharan Africa will increase more and more with the spread in the use of Internet. Furthermore, broadband services will make the prospects in e-government much better for them as it will provide more efficient services in e-government by enhancing the telecommunications infrastructure. Consequently, the OIC Member States can achieve higher scores in the e-government readiness index by taking action in the delivery of critical public services; making public administrations more attuned to the needs of their citizens; improving transparency and accountability; and fostering citizen's access to public and official information, which require using modern ICT technologies on a broader scale.Given this state of affairs, the following recommendations are suggested for reaching the e-government readiness at the OIC level:

1) Human capital emerges as a priority area for development in most OIC Member Countries to prepare their nations for e-government transformation. Therefore, a legal and regulatory framework should exist to ensure that education attainment in schools include teachings on ICT use to ensure that future generations are adept with technological advancements.

2) OIC Member States should enhance their efforts to increase computer penetration rates as the OIC Countries in Sub-Saharan Africa have strong potential for development in these areas and given the fact that many countries worldwide have not made significant progress yet. Furthermore, service providers should be able to offer high speed Internet connection at competitive prices. This will help bridge the gap in digital divide.

3) The OIC Member Countries not affording the proprietary based software and applications for e-government transformation can outsource e-government services and use it as tool in e-government transformation.

4) For the promoting the use of e-government portals, citizens should be provided with easy-to-surf pages.

5) Security should be provided with affordable authentication technologies of electronic and/or mobile signatures for making online transaction in e-government portals more reliable for citizens.

6) E-government sites should provide incentives for users to complete their transactions online.

7) OIC Member States need to apply performance measures to ensure that e-government programs are implemented effectively and overcome challenges in e-government through establishing dialogues among stakeholders at the national, regional and OIC levels.