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Towards an eGovernment: the case of the Emirate of Dubai.

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**Towards an eGovernment:
the Case of the Emirate of Dubai**

WALEED AL BAKR

**A thesis submitted in partial fulfilment of the
requirements of the University of Westminster
for the degree of Doctor of Philosophy**

September 2009

Abstract

This thesis examines and assesses the transformation and implementation of the Dubai Government's operation, governance and delivery of public services through its use of ICT. The research design includes a critical examination of the evolution of ICT and its role in changing public services and government operations worldwide as an early move towards E-Government. Three recognised theories are used to examine the E-Government transformation and its effects of on governments, namely: the Technology Acceptance Model (TAM), the Diffusion of Innovation Theory (DOI) and the Lens of Max Weber's Theory of Bureaucracy.

Generally, the study seeks to determine what were the important factors for Dubai to achieve its strategic plan. Six questions were addressed by the research, stating the scope of work undertaken. First, to measure the status of eGovernment initiatives in terms of usefulness and ease of use. Second, to assess the extent of eGovernment application in terms of Government-to-Customer, Government-to-Business, Government-to-Government, and Government-to-Employees. Third, to determine the level of acceptance of eGovernment initiatives. Fourth, to explore the factors/challenges in a successful eTransformation of Dubai. Fifth, to assess the impacts/opportunities of eGovernment initiatives in the development of Dubai. Sixth, to formulate the model to achieve a successful implementation of eGovernment.

A purposive sampling method was used for selecting citizens/customers, business employees and government employees, totalling 1500 equally distributed respondents. The researcher has prepared, administered and empirically tested three questionnaires, and also prepared and administered structured interviews with some officials of eGovernment. Data obtained are presented and analysed. Also, the study examines the catalytic role of eGovernment in the development of society, commerce and government, and shows fundamental changes from traditional systems or from bureaucratic paradigms to eGovernment paradigms. Comparisons are made with eGovernment applications in other countries as per rankings made by the Economist Intelligence Unit (EIU). The researcher has selected top ranked states to examine best practices in e-Government.

Most importantly, this research presents a unique and original contribution to knowledge of the subject treated in its programme for achieving successful eGovernment through the proposed rocket ship model Al Bakr eGovernment Model of implementation, adoption, conclusions and findings of the study.

Statement of Originality

I hereby certify that the research presented in this thesis is my own, conducted under the supervision of Professor Nabil Ayad and Dr Riad Nourallah at the University of Westminster.

I declare that, to the best of my knowledge, my thesis does not infringe upon anyone's copyright nor violate any proprietary rights and that any ideas, techniques, methodology, quotations, or any other material from the work of other people included in my thesis, published or otherwise, are fully acknowledged in accordance with the standard referencing practices using language that indicates they existed before this work.

I also declare that none of the work has been submitted for another degree in this or any other University.

Signed: Date: 13th September 2010

Name: W. Al Bakr

Dedication

This is dedicated to
H. H. Sheikh Mohammed Bin Rashed Al Maktoum,
Vice President and Prime Minister of UAE and Ruler of Dubai,
whose vision was of great inspiration
to the Emirate of Dubai
and this work.

Acknowledgements

I am enormously grateful to Allah who permits me to live and to accomplish tasks including the successful completion of my PhD research. I thank the Almighty for the blessings, guidance and good health throughout the entire journey.

A few lines are too short to make a complete account of my deep appreciation for those who have inspired me and influenced my actions and have given me the opportunity to complete this research, namely:

H. H. Sheikh Mohammed Bin Rashed Al Maktoum, an inspiring leader and a true visionary who initiated and guided the transformation to E-Government. His vision has influenced my entire life philosophy.

Professor Nabil Ayad, a distinguished specialist in the E-Government field. I wish to thank him for honouring me by agreeing to supervise my research at the University of Westminster. I am grateful for the intellectual stimulation and scholarly guidance and his valuable advice provided during the course of my study. This research would not have been possible without the expert guidance of my esteemed adviser, Professor Nabil Ayad.

I would like to sincerely thank Dr Riad Nourallah, for his critical comments as well as valuable suggestions. I am sincerely grateful for his support, kind help and inspiration throughout my research.

I extend my great thanks to all University of Westminster faculty and staff members who facilitated this work and provided a generous assistance. I would like to thank three individuals that I was fortunate to have met during my years of study, Mr Mike Fisher, Mrs Fatmah Lallmahamood, and Dr Patricia Hogwood.

My gratitude also goes to the internal assessor, Dr Abdel Wahab Al Affendi for his participation, time and effort and valued contribution to this research. He has provided much motivation and inputs for me to produce a professional piece of work.

Also I wish to express my gratitude to the Government of Dubai at all levels and in all relevant departments; starting from directors, managers, supervisors, and to all staff members at all levels for providing information and essential data and for their cooperation and help in facilitating my field work. Special thanks go to Mr Salem Khamis Al Shaer and Mrs Rihab Lootah for sharing their professional experience during my field research and interviews. I am also grateful to all my respondents for their patience and cooperation in answering my questionnaire.

Special thanks are extended to the Chief Commander of Dubai Police, Lieutenant General Dhahi Khalfan Tamim, who has awarded me my scholarship and provided support and encouragement to start and finish my research.

Obviously I would not be sitting in front of my monitor typing these acknowledgements without my mother and father. I owe my loving parents much of what I have achieved. I thank them for their support throughout my life. My father has put education as a first priority in my life and raised me to set high goals for myself. I dedicate this work to them, to honour their love and patience and prayers during these years.

Finally, words are not enough to convey my gratitude to my family. To my wife, two daughters, and two sons, I owe many thanks for my career successes and those that are forthcoming. I could never have completed this research without their considerable encouragement, cooperation and patience. Thank you.

Towards an E-Government, the Case of Emirate of Dubai

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List of Abbreviations and Acronyms

Acronyms

AGIMO	-	Australian Government Information Management Office
ARPA	-	Advanced Research Project Agency
ARPANet	-	Computer Network by ARPA
ATM	-	Automated Teller Machine
COTS	-	Commercial-off-the-shelf
CRM	-	Customer Relationship Management
DDeG	-	Department of Dubai eGovernment
DOI	-	Diffusion of Innovation Theory
DSL	-	Digital Subscriber Online
EB	-	Electronic Business
EIU	-	Economist Intelligence Unit
FDI	-	Foreign Direct Investment
GCC	-	Gulf Cooperation Council
GDN	-	Government Data Network
GDP	-	Gross Domestic Product
GRP	-	Government Resource Planning
GSI	-	Government Secured Intranet
G2B	-	Government to Business
G2C	-	Government to Customer
G2E	-	Government to Employee
G2G	-	Government to Government
HR	-	Human Resources
ICT	-	Information and Communication Technology
IEE	-	Intergovernmental or Internal Efficiency and Effectiveness
IT	-	Information Technology
JAFZA	-	Jebel Ali Free Zone Authority
MMS	-	Multimedia Service
NAWAR	-	Networking, Applications, Web-accessibility and Readiness
LAN	-	Local Area Network
PC	-	Personal Computer
PDA	-	Personal Digital Assistant
PIA	-	Privacy Impact Assessment

PKI	-	Public Key Infrastructure
PKI	-	Public Key Identifier
PPPM	-	Public-Private Partnership Model
SMS	-	Short Message Service
SOA	-	Service Oriented Architecture
SPSS	-	Statistical Package for Social Sciences
TAM	-	Technology Acceptance Model
TCI/IP	-	Transmission Control Protocol / Internet Protocol
TECOM	-	Technology, Electronic Commerce and Media Free zone Authority
UAE	-	United Arab Emirates
USAID	-	United States Agency for International Aid
WLAN	-	Wireless Local Area Network
WWW	-	World Wide Web

Abbreviations

E-Government	-	Electronic Government, generic terminology.
E-Pay	-	Electronic Pay, generic terminology.
E-Procurement	-	Electronic Procurement
E-Service	-	Electronic Service, generic terminology
E-Business	-	Electronic Business.
E-Commerce	-	Electronic Commerce.
E-Democracy	-	Electronic Democracy.
E-Readiness	-	Electronic Readiness
E-Awareness	-	Electronic Awareness
E-Transformation	-	Electronic Transformation, generic terminology.
eGovernment	-	Electronic Government of Dubai as a project name.
eProcurement	-	Electronic Procurement of Dubai as a project name
ePay	-	Electronic Pay of Dubai as a project name.
eRegistration	-	Electronic Registration of Dubai as a project name.
eService	-	Electronic Service of Dubai as a project name.
eTransformation	-	Electronic Transformation of Dubai as a project name.
mDubai	-	Mobile Dubai service
Web	-	World Wide Web

CHAPTER I

INTRODUCTION

1.1.Introduction

The importance of this research is derived from the world's attention toward the information revolution and the emergence of an information society in an age where information rules. The engine of change in the last decades is the "Internet", the biggest man-made machine. Innovations moved from mechanical to electro-mechanical and then to electronic. What makes this research different is its focus on the intellectual technology and the transformational effect of this as a revolutionary change in the public sector. Information and communication technology (ICT) differs radically from the infrastructure of the previous decade. The research emphasises interaction and participation and extends enormously to the medium in use with its hundreds of millions of interconnections and the access of those who influence the acceptance or rejection of new styles of work in the government sector.¹ The Internet has gained a considerable level of popularity in both public and private sectors and transformation is in full swing.

Governments in developed and some developing countries have started adopting the concepts of Electronic Business (EB) in the way they conduct their everyday tasks and offer their services to the average citizen. This new model of public service growth is more of a technology-based self-service approach and thus the term "Electronic Government or E-Government" has emerged. It took shape when these governments offered their services over the Internet to individuals, institutions, government departments and the private sector. Government agencies worldwide are transforming themselves into E-Governments to meet their constituents' demands for better and broader access to public services. Among the major reasons why many governments are seeking to modernise or reinvent themselves are to gain and retain trust, credibility and confidence from their constituents². By creating new business models and adaptive performance-oriented partnerships with the private sector, this new paradigm requires government to create a different public-private partnership model (PPPM) to successfully modernise its operations and delivery of public services.³

¹ Tim Berners Lees, *Weaving the Web: The Original Design and Ultimate Destiny of the World Wide Web*, (New York: HarperCollins Books 2000) pp. 35, 53

² Heek, R., *Reinventing Government in the Information Age*, (London: Rutledge Press 2000)

³ Albert N. Link, *Public/Private Partnerships: Innovation Strategies and Policy Alternatives*, (USA: Springer 2006)

The effect of ICT in the United Arab Emirates, particularly Dubai, one of the seven members of the United Arab Emirates federation, brought about new and tremendous transformation of governance and operations. In the 1930s, even before the PC was invented, a consultative council, known as the Majlis, was set up.⁴ In this body, the Ruler was made the President of the Majlis of fifteen councillors. This traditional official consultative meeting consisting of rulers and heads of tribes drafted practical reforms and changes in the political and social structures as well. It demonstrated that institutions such as a Municipal Council were both necessary and useful. This, however, lacked the efficiency of present-day government infrastructures. With the infusion of ICT advances, traditional sheikhdoms metamorphosed into a modern ICT-enabled government that not only capitalised on its natural resources of oil but also its positioning in the world as business services provisions hub.

On 5 April 2000, Dubai announced its ambitious plans to build a modern economy based on trade and tourism in the face of the impending exhaustion of its oil reserves. To have Dubai Government online or on the web was indeed a logical and important step in the development of government and the community interaction. The world is changing fast and Dubai should not be left behind in the digital revolution or in the digital race. Though a small Emirate, Dubai has considerable resources and human potential and drive to make the migration to E-Government and E-commerce the way for Dubai to maintain its economic successes and further its prominence as the regional economic hub.

Against this background, allowing public access to the Internet was arguably the most pivotal public policy choice that stimulated this rise in networked computing.⁵ Other modes of behaviour that helped to popularise interest in the new technologies have included high levels of actual and symbolic support from the Dubai Government and the enthusiasm of business and technology journalists about “information superhighways”.⁶ The possibilities of widespread Internet use have also stimulated substantial development in a variety of applications, such as electronic commerce, distance education, electronic publishing, digital libraries and virtual communities.⁷

⁴ Heard-Bey, F. *From Trucial States to United Arab Emirates*. (UAE: Motivate Publishing, 2004)234-258.

⁵ Mehdi, Khasrow-Pour, *E-Government Diffusion, Policy, and Impact, Advanced Issues and Practices*, (IGI Global 2009) p 94

⁶ Yves Courrier, Andrew Large, *World Information Report*, UNSECO 1996

⁷ Michael A. Banks, *On the Way to the Web: The Secret History of the Internet and its Founders*, (New York: Springer 2008) p49

The emergence of these new applications has spurred considerable speculation about the social changes that could arise if Internet uses were to become widespread. In attempting to investigate challenges, which may oppose the successful deployment of E-Government, this study identifies a range of obstacles that might be encountered with E-Government deployment. The nature of the research is based on multi-disciplines and covers a number of areas including Management Information Systems (MIS) and Organisational, Management theories and political sciences. The major areas are combined because of the nature of the problem. In this study, MIS is a profession and a corporate function at the same time.

This study is an original contribution to human knowledge in its methodology, scope and particular emphasis and linkage. The questions it raises and attempts to answer as well as the conclusions drawn should be useful for similar E-Government projects in developing countries and in other similar public sector reform efforts. Lessons learnt can be considered to guide transformation initiatives to E-Government.

1.2. Background to the Research

The background of the research is associated with the post-industrial revolution and information era when government processes are transformed into an electronic commerce. This has been the quintessence of considerable research focusing on its impact on government organisations and societies. Towards the end of twentieth century, many books and articles came off the press and were published on the Internet; they either looked back or looked ahead on the rapid advances of information and communication technologies (ICTs) in government operations and public services.

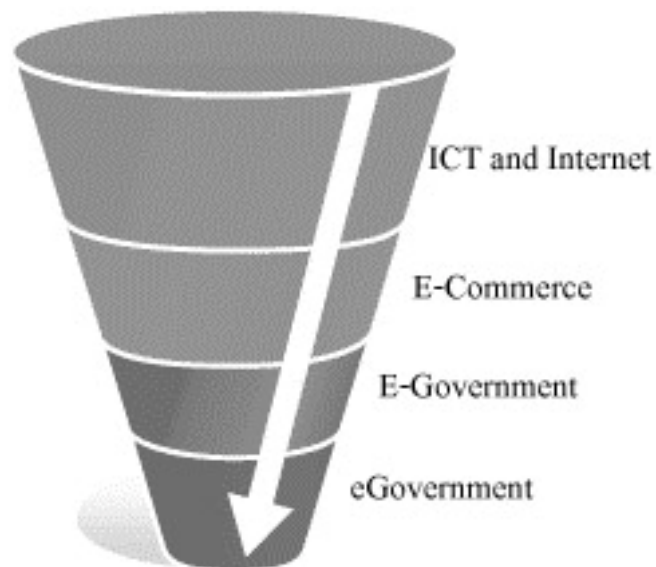


Figure 1. Focus of the Study (Research Funnel)

Figure 1- Focus of this Study (Research Funnel) provides the conceptual signposts of discussion and directions of the study. The inverted pyramid signifies the deductive approach of the study that starts with the discussion in a broad field of information and communication technology and the Internet, then narrows down to relevant concepts of E-Commerce. It narrows down even further to explore the gist of the research about E-Government implementation in the world and finally on the analysis of the case study of eGovernment initiatives in the Emirate of Dubai. This ultimately leads us to be able to test the hypothesis with specific research data. The flow starts with the exploration of related theories, stating the hypothesis, field study observation and finally the research conclusions.

This research uses a number of recognised theories of E-Government implementation in some nations and on the eGovernment initiatives of Dubai. These theories have similarly been used by other researchers and experts to examine the influence of ICT innovation on the governments and the factors that support its successful adoption. These consist primarily of the Technology Acceptance Model (TAM), the Diffusion of Innovation Theory (DOI) and the Lens of Max Weber's Theory of Bureaucracy.

The Technology Acceptance Model (TAM)

The Technology Acceptance Model or TAM by Davis, et al., is an adoption of a behavioural intention theory, called the Theory of Reasoned Action by Ajzen and Fishbein. TRA denotes that behavioural intentions are driven by and the function of an individual's attitude toward the behaviour and subjective norms surrounding the performance of the behaviour.⁸ In 1985, Fred Davis suggested that the technology acceptance model (TAM), deals more specifically with the prediction of the acceptability of an information system.⁹ TAM's purpose is to examine the acceptability of a technology and to identify the modifications which must be brought to the system in order to make it acceptable to users. This model shown in Figure 2 reveals that the acceptability of an information system is determined by two main factors: perceived usefulness and perceived ease of use. Perceived usefulness refers to the degree to which a person believes that the use of a system will improve performance while perceived ease of use refers to the degree to which a person believes that the use of the system will be effortless. The TAM model postulates that the use of an information system is determined by the behavioural intention which is determined by the person's attitude towards using the system. Moreover, this attitude of a person in his/her use of a system is determined by his/her belief that it will improve his/her performance and that the system is easy to use or effortless.¹⁰

Therefore, this model hypothesises a direct link between perceived usefulness and perceived ease of use to the acceptability and adoption of an information system. If an end-user does not welcome an information system, the probability that it will not be used is high. On the other hand, if he/she perceive that the system will improve his/her performance and efficiency at work, it would encourage users to exploit whenever a computer opens up the opportunities. However, when there are two systems offering the same features, a user will find more useful the one that is easier to use¹¹. Consequently, the measure of perceived usefulness and perceived ease of

8 Fishbein, M., & Ajzen, I. *Belief, Attitude, Intention, and Behaviour: An Introduction to Theory and Research*, (Ontario: Addison-Wesley Pub. Co. , 1975) 124-131.

9 Davis, F. D. *A Technology Acceptance Model for Empirically Testing New End-user Information Systems: Theory and Results*. (Sloan School of Management, Massachusetts Institute of Technology, 1986) 234.

10 Davis, F. D. "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology". 1989 *MIS Quarterly*, 13(3), 319-339.

11 David W. Embley, Antoni Olive, Sudha Ram (Eds), *Conceptual Modeling ER 2006: 25th International Conference on the Conceptual Modelling*, Tucson, AZ, USA, November 2006 Proceedings, (USA: Springer 2006) page 59.

use of an information system is crucial data to be analysed for the successful implementation of E-Government (see Chapter four).

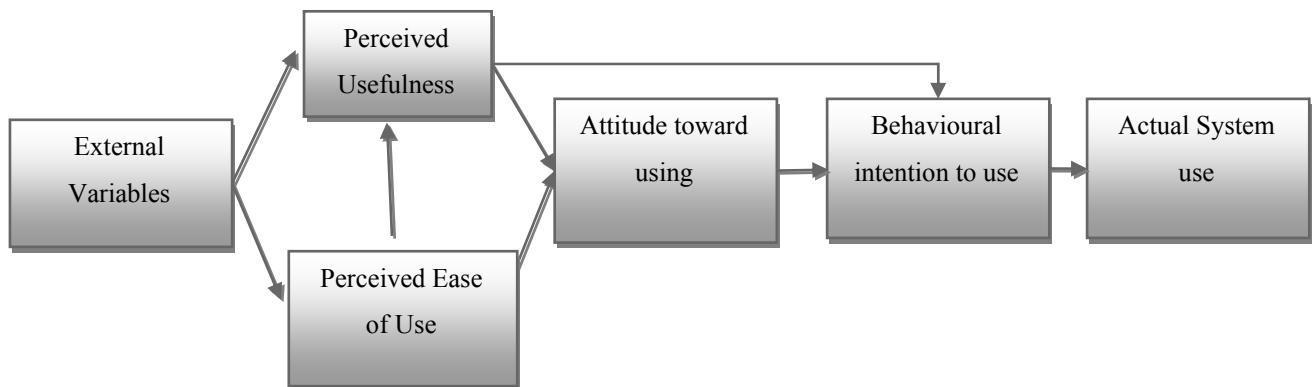


Figure 2. Technology Acceptance Model (TAM) ¹²

A review of technology acceptance literature revealed many competing theoretical models, each with different focus and tested in different contents. A significant amount of research effort has been put into building theories to examine how and why individuals adopt new information technology and predicts their level of adoption and acceptance. While one stream of research focuses on individual acceptance of technology by using the role intension or usage as a dependent variable or a predictor of behaviour, explaining user behaviour across a broad range of end-user computing technologies and user populations. Other streams have focused on implementation success at the organisational level and task-technology fit¹³. While each of these streams makes important and distinctive contribution to the literature on user acceptance of Information Technology, the theoretical models to be included in the present review, comparison, and synthesis employ intension and/or usage as the key independent variable. TAM's four major variables are: Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Behavioural Intention (BI), and Behaviour (B). PU is used as both a dependent and independent variable since it is predicted by PEOU, and predicts BI and B at the same time. Behaviour was usually measured using frequency of use, amount of time using, actual number of usages, and diversity of usage.¹⁴

¹² Davis, F. D., Bagozzi, R. P., and Warshaw, P. R. "User Acceptance of Computer Technology: A Comparison of Two Theoretical Models," *Management Science*, 35, 1989, 982-1003.

¹³ Rahman, S. *Multimedia Technology: Concepts, Methodologies, Tools and Applications*, (IGI Global, 2008) 32-44..

¹⁴ Venkatesh, V., M. G. Morris, G. B. Davis, and F. D. Davis, *User Acceptance of Information*, 2003

Diffusion of Innovation Theory (DOI)

The second theory that is employed in this study is the Diffusion of Innovation Theory by Everett Rogers.¹⁵ This theory refers to the process by which an innovation is communicated through certain channels over time among the members of the social system¹⁶. The analysis of his definition provides four main elements that are present in the diffusion and innovation process. These are: 1.) innovation that refers to ideas, practices, objects that are perceived as new, 2.) communication channels, this refers to the means by which messages are conveyed, 3.) time that comprises the decision process, relative time and the rate of adoption, and finally, 4.) social system that refers to the set of interrelated units jointly accomplishing a goal.

Figure 3 illustrates the Diffusion of Innovation (DOI) Theory. This model which is also known as the innovation adoption curve of Rogers and also as the multi-step flow theory classifies the adopters into various categories, based on the idea that certain individuals are more open to adaptation than others. As cited in his book, Rogers provides the five categories of adopters: the first are innovators about 2.5%-13.5% who are brave people that pull change, the second are early adopters about 34% who are respectable, opinion leaders, and try out new ideas in a careful way, the third are early majority about 34% who are thoughtful people, careful but accepting change more quickly, the fourth are late majority about 34% who are sceptical people who will use new ideas and products only when a majority is using it, and the fifth is the laggards about 16% who are traditional people and are critical towards new ideas¹⁷. This model premises that trying to quickly and massively convince people of a new controversial idea is difficult if not useless. It makes more sense to start with convincing innovators and early adopters. Furthermore, the categories of Rogers may also be used to estimate targeted groups for effective communication.

¹⁵ Everett Rogers. Diffusion of Innovation. Fifth Edition. (New York: Free Press, 2003) 67-89.

¹⁶ Ibid.

¹⁷ Ibid pages 12, 23, 280

Rogers Adoption / Innovation Curve

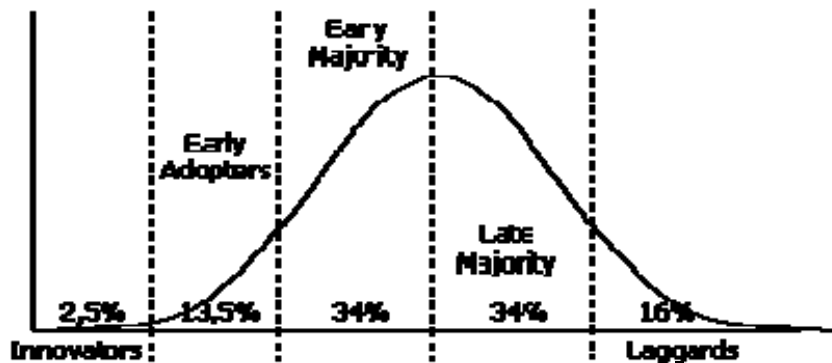


Figure 3: Diffusion of Innovation Theory¹⁸

The DOI model also shows that early adopters select the technology first, followed by the majority, until a technology or innovation is common. This model has been popularly used in researches on technology diffusion that focuses on the conditions which increase or decrease the likelihood that a new idea, product or practice will be adopted by members of a given culture. Hence, it can be said that the people's attitude toward a new technology is a key element in its diffusion. Moreover, as noted by Rogers in his book, this diffusion is a result of a process that occurs over time through five stages, to wit: knowledge, persuasion, decision, implementation and confirmation¹⁹.

The Lens of Max Weber's Theory of Bureaucracy

The word 'bureaucracy' can have a neutral meaning. Simply, according to Webster's dictionary, it can be used as a noun for 'government officials, collectively'. Most of us, however, think of bureaucracy as an 'excessive adherence to rules and routine', very often applied by government departments. Some ten years ago, the government departments of Dubai would probably have been associated with the more negative aspects of 'bureaucracy'. Without a coordinated approach to setting objectives and standards, and no means of measuring customer satisfaction, government services were operated on an inconsistent basis with limited emphasis on improvement. Government employees may

¹⁸ Evertt, M, Rogers, *Diffusion of Innovations, Fifth Edition* (New York: Free Press 2003) 168-189

¹⁹ Ibid.

have been secure in their jobs, but not particularly well recognised internally or appreciated by the general public.

Furthermore, the study also employs the lens of the Max Weber's theory of bureaucracy, examination of the E-Government implementations around the world as well as the implementation of eGovernment in Dubai. In his theory of bureaucracy, Max Weber, as noted in his translated work, *Economy and Society: An Outline of Interpretative Sociology*, described a new organisation form that had emerged in western society during the second half of the nineteenth century in which leadership and authority were derived from a more rational framework than was the case before.²⁰ In the past governmental structures, authority was derived from either charisma or tradition. In the case of authority arising from charisma, followers obeyed charismatic leaders out of devotion, loyalty and respect. On the other hand, traditional authority existed due to historical bases that people obeyed a person in power for the simple reason that the person was in a position of traditional power as in cases of monarchical and other hereditary leadership positions. The authority in the new, bureaucratic organisational form is considered more rational because leaders were recognised and obeyed for subscribing to values of logic, efficiency and reason. Such organisations functioned on the basis of legitimacy from laws, rules and regulations. The bureaucratic structure is typically oriented towards solving problems. The bureaucratic decision-making is guided by the objectives of efficiency, calculability and predictability. Hence, decisions were more rational because they were immune to personal, irrational and emotional aspects.

The goal of bureaucracy is to maximise efficiency, according to Weber²¹. Bureaucracies are technically efficient instruments of administration because their institutionalised rules and regulations enable all employees to perform their duties optimally. However, several scholars have criticised various aspects of this organisational form by Weber. According to Merton, the fundamental failure of bureaucracy is its tendency to foster goal displacement²². Excessive adherence to rules and regulations results in rules becoming ends in themselves, and sometimes prevents organisations from achieving their real goals. Additionally, organisational members in bureaucracies often tried to apply formal rules and procedures in unsuitable situations thus resulting in dysfunctional outcomes. Selznick discovered the phenomenon of "sub-optimisation" in bureaucracies; i.e. delegation of authority resulted in

²⁰ George Ritzer, Douglas J. Goodman, *Social Theory*, 6th ed., (New York: McGraw Hill High Education, 2004) 108.

²¹ Ibid.

²² Merton, R.K. *Sociological Theory and Social Structure*. Free Press, New York, 1976.

organisational sub-units pursuing goals that were different from the stated goals of the organisation as a whole²³. Burns and Stalker observed that highly bureaucratic organisations are resistant to change²⁴. The prevailing atmosphere of hierarchy, control, efficiency and predictability meant that organisational members favoured self-continuity and felt threatened by change. Such organisations, thus, are poor at innovating or embracing new ideas.

Relevant to the issue, Weber identified three key features of bureaucratic organisations. First, bureaucracies had a formal and unambiguous hierarchical structure of power and authority. Second, bureaucracies had an elaborate, rationally derived and systematic division of labour. Third, bureaucracies were governed by a set of general, formal explicit, exhaustive and largely stable rules that were impersonally applied in decision-making; moreover, all decisions and communications were recorded in permanent files and such records were used to refine existing rules and derive new ones. In summary, the key features of Weberian bureaucratic organisations are that they are hierarchical, maintain division of labour and are governed by rules. Hierarchy results in a vertical differentiation while division of labour entails horizontal differentiation within an organisation structure.

The advent of internet, networked communities, the explosion of growing use of E-Commerce and E-Business models in the private sector are pressuring public sector to rethink hierarchical bureaucratic organisational models. There are two outcomes that surface from the scrutiny through the lens of Max Weber's theory of bureaucracy to examine the E-Government implementations. The first result is that ICT is a tool for reforming bureaucracy, and the second outcome posits that E-Government failure may be attributed to bureaucracy. The first result is that an examination of E-Government through the lens of Weber's Theory of Bureaucracy reveals that ICT is a tool for reforming bureaucracy. According to this view, IT can be a driver and enabler of change and reform because it challenges the boundaries of offices and departments. This study upholds the opinion of Bellamy and Taylor in their book, *Governing in the Information Age*, that ICT can foster improvements in collaboration and information sharing within government bureaucracies, and can thus make government flexible, responsive and efficient. ICT enables new information flows that challenge past norms and capabilities²⁵. Moreover, E-Government initiatives allow public administration agencies to transcend their traditional

²³ Selznick, P. *TVA and the Grass Roots*. University of California Press, Berkeley, Jan 19, 2010

²⁴ Burns, T. and Stalker, G.M. *The Management of Innovation*. London, 1994.

²⁵ Bellamy, C. and Taylor, J. *Governing in the Information Age*. (Buckingham: Open University Press, 1998) 45.

hierarchical structures of accountability²⁶, as well as diminished the amount of red tape and accelerate the delivery of government services²⁷. Hence, E-Government initiatives offer an opportunity for governments to re-invent themselves, get closer to citizenry and forge alliances and partnerships with diverse communities of interests, practices, expertise and conviction within the context of national development goals. Tapscott and Caston argue that ICT causes a "paradigm shift" introducing "the age of network intelligence", reinventing business, government and individuals.²⁸ We conclude that E-Government can create significant benefits for citizens, businesses, and governments around the world.

The second outcome gleaned from using the lens of Weber's theory of bureaucracy is that E-Government initiatives may fail because of the bureaucratic nature of government organisation. According to Wert in his *Questions about E-Government*, the structures resulting from the key features of Weberian bureaucracy namely, hierarchy, division of labour and rigidity of rules, may become problems in the implementation of E-Government. Bureaucrats want to hoard information, rather than collaborate and want organisations to "shine"²⁹. The accountability in government reinforces the high inflexibility of its organisational procedures that results in difficulty in integrating systems and practices between departments. This view also holds that the key features of a Weberian bureaucracy, i.e. hierarchy, division of labour and rigidity of rules have led to a situation in bureaucratic organisations where processes are highly inflexible and information is not shared properly. This has resulted in government organisations being inflexible and unresponsive to the needs of citizens.

²⁶ Allen, BA. et al. "E-governance and government on-line in Canada: Partnership, People and Prospects". Government Information Quarterly. 2001. vol. 18. 93-104.

²⁷ Fountain, J. *Building the Virtual State: Information Technology and Institutional*. op.cit. p. 256.

²⁸ Don Tapscott, Art Caston, *Paradigm Shift: The New Promise of Information technology*, (McGraw-Hill Companies 1992)

²⁹ Wert, V. Questions about E-Government. (Digital Government Workshop, 2002)
http://www.ksg.harvard.edu/cbg/dgworkshop/vanwert2_12.05.2008.

1.3. Aims and Objectives of the Research:

1.3.1. Aims:

The principal aims of this thesis are to identify and assess a number of important considerations towards a successful eTransformation process and to suggest a model for a successful eGovernment implementation in the Emirate of Dubai.

1.3.2. Objectives:

The research seeks to determine the following:

1.3.2.1. To establish the field and context of research by moving the discourse from topics of greater generality in Information Communications Technology (ICT) toward a focus on the specific problem related to efforts of E-Government worldwide and then narrow it down to the case of the Emirate of Dubai eGovernment initiatives and its current status of implementation.

1.3.2.2. To describe and assess of the initial theoretical models considered, namely, Technology Acceptance Model (TAM), the Diffusion of Innovation Theory (DOI) and the Theory of Bureaucracy (TOB) as theoretical framework.

1.3.2.3. To define the research methodology, scope and direction, research problem, hypotheses as the basis of research design and anticipated outcomes.

1.3.2.4. To critically investigate the development of the most related literature and use of secondary data with regard to the interest of the research in ICT evolution as a foundation and the adoption process in the public sector.

1.3.2.5. To examine the status of E-Government initiatives around the world to learn the best practices based on the outcome of eReadiness ranking of 2008.

1.3.2.6. To describe the case study and evaluate the development of the Emirates of Dubai through an empirical study and its presentation and analysis of gathered primary data.

1.3.2.7. To use the knowledge that has been gained in objectives 1–5 to develop a model of implementation and eTransformation in order to achieve a successful eGovernment.

1.3.2.8. To determine by way of concluding the important achievements, concerns. Challenges and continuing aspiration of Dubai in the context of eTransformation and the lessons learnt from universal best practices along with recommended action for more effective outcomes and increased efficiencies.

1.3.2.9. To highlight and discuss the potential for further research work and future study.

1.4. Rationale for the Research

The rationale for the research proposes a master plan that provides a framework in the conduct and completion of the study. It puts forward the deliberations, actions and academic research activities needed to capture the different perspectives to develop concepts, methods and approaches that improve the delivery and development of E-Government through the invaluable inputs of the stakeholders.

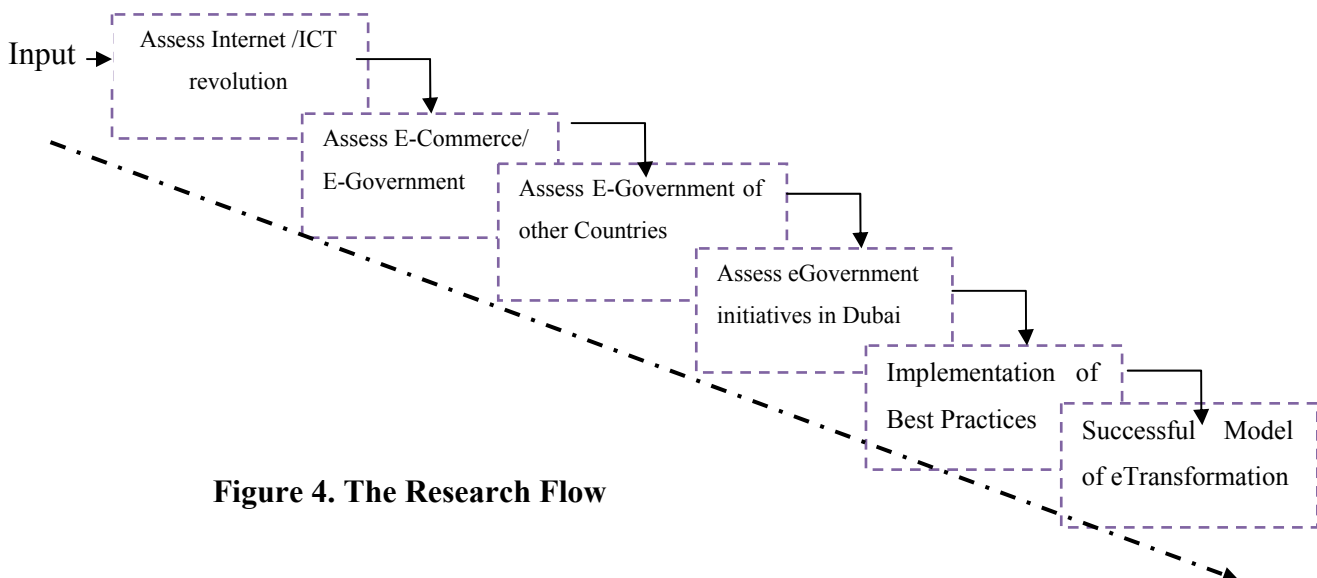


Figure 4. The Research Flow

This research is directed at understanding the Dubai government initiatives to reinvent itself particularly its governance and operations with a fervent hope in coming out with significant research conclusions to make informed management decisions for future planning and development of E-Government initiatives on the UAE, and draw conclusions and lessons for other countries on the Gulf Cooperation Council and other developing countries. This research serves as a model thereto and has a direct application

to support and guide the transformation to electronic government of the federal government and governments worldwide.

Moreover, the significance of this research derives from its discussion of the evolution of the Internet, E-Commerce and E-Government. It aspires to be a distinct contribution to an emerging body of knowledge through an original investigation, analysis and testing of ideas and formulation of a strategic programme towards an eGovernment of Dubai.

Furthermore, this research assesses the initiatives of the Dubai government in its effort to modernise its operations, governance and delivery of public services through a transformation to an electronic government. The focus will be on the salient aspects of the transformation processes and parallel processes that accompany this change of Dubai's local government towards increase efficiency and customer service. This redefinition of government will hopefully catapult Dubai into the new world economy created by the ICT revolution. Consequently, the thesis examines the conditions under which it is appropriate and likely for Dubai Government to become fully digitised. It conjectures that the unique tools, talents, resources policy and strategies being utilised and implemented could prove effective in mitigating many significant social, political, economic, organisational and technological challenges that are to accompany the modernisation of Dubai. It will consider Dubai in the complex process of the transformation to eGovernment which is a totally different organisational change, and it will subsequently explore the factors needed for a successful transformation towards eGovernment, and gauge the impact of this to Dubai's development. Chapter five of this thesis lays down and discusses a formulated programme to achieve a successful eGovernment of Dubai. Chapter six presents the conclusions and recommendations that elucidate answers to the research questions and put forward suggested actions for successful implementation of eGovernment.

For an analysis of an effective transformation of public service, the envisaged transformation of Dubai towards eGovernment cannot only consider its performance and processes, but it should be measured against similar efforts towards reinventing governmental organisations and the best practices and case studies in the world relevant to the study. Accordingly, the most notable rationale for this research is to

provide significant data for best practices selection and assessment of Dubai government's readiness for not simply managing change as a one-off event, but institutionalising a continuity of it. By benchmarking this transformation effort against current best practices, it is possible to adopt an open-minded approach to the future of eGovernment. With the assessment of Dubai government readiness and the designated set of objectives, a theoretical framework and a pragmatic approach will be provided to increase the chances of moving Dubai towards a more successful Government.

E-Government efforts call for a new type of public servant who is comfortable with collaboration and horizontal relationships rather than hierarchical decision-making structures. These E-Government initiatives may face resistance as they upset the status quo. Government departments are used to work as separate units, answerable only to their responsible minister. Hence, this results into a problem of actually getting different departments and agencies to work with each other, to share information and even budgets in pursuit of better services to the citizenry. Poor governance cannot be cured by the semantics of "e". ICT infusion will not undo corrupt, bloated bureaucracies and ineffective public institutions. Before E-Government initiatives can succeed, bureaucratic reform may be necessary to readily embrace the advantages of E-Government.

This research on the eGovernment of Dubai initially assesses the experience of eServices / eGovernment of Dubai by its main stakeholders namely the citizens, business employees and government employees. Properly, it also determines the status of eGovernment in terms of level of perceived usefulness and perceived ease of use as well as the level of completion and level of acceptance of eGovernment initiatives. Moreover, the factors/ challenges for a successful eTransformation towards eGovernment and the impact/ opportunities of eGovernment initiatives towards the development of Dubai are also identified. Finally, taking into account the findings of the study and the analysis of the best features of E-Government implementation in the world, a model for implementation of eGovernment is recommended. This study hopes to be an invaluable guide and reference towards the successful eGovernment transformation of Dubai.

This study intends to be an original contribution to human knowledge on the subject of E-Government as it seeks to investigate unique research problems, particularly on its research focus on the eGovernment initiatives of Dubai. With recognised theoretical models as guide, the findings and conclusions drawn, and the proposed model of E-Government implementation, this study may also serve as an indispensable tool of reference and guide in E-Government projects in other Emirates and developing countries.

With the vision of Sheikh Mohammed Bin Rashed Al Maktoum, the Prime Minister of UAE, and the Ruler of Dubai, (referred later in this study as Sheikh Mohammed) who has been one of the driving forces behind Dubai's bid to diversify its income away from its dwindling oil reserves. He declared, “We must ease the lives of people and businesses interacting with the government and contribute in establishing Dubai as a leading economic hub”³⁰. This study adheres to the said declaration.

1.5. Research Problem:

The principal objective of this study is to determine the important considerations of Dubai in the move towards eGovernment. The main problem is subdivided into six components that will determine the gamut of areas that will be essential in resolving the main problem.

Specifically, this study will address the following:

1. What is the status of eGovernment initiatives of Dubai in terms of:
 - Perceived usefulness
 - Perceived ease of use?
 - Level of Acceptance

2. What is the level of completion of eGovernment initiatives of Dubai in terms of:
 - Government-to-Customer (G2C)
 - Government-to-Business (G2B)
 - Government-to-Government (G2G)
 - Government-to-Employees (G2E) ?

³⁰ The Official Portal of Dubai Government. Home Page
<http://www.dubai.ae/v7/en.portal>, 18.09.2008

3. What is the level of acceptance of eGovernment initiatives of Dubai in terms of:
 - Government-to-Customer (G2C)
 - Government-to-Business (G2B)
 - Government-to-Government (G2G)
 - Government-to-Employees (G2E)?

4. What are the factors/challenges towards a successful eTransformation of Dubai towards eGovernment?

5. What are the impacts/ opportunities of eGovernment initiatives towards the development of Dubai?

6. What model may be formulated to achieve a successful implementation of eGovernment in Dubai?

1.6. Research Hypotheses

The status of perceived usefulness and perceived ease of use, the level of acceptance and level of completion of eGovernment initiatives of Dubai, the factors/challenges towards a successful eTransformation of Dubai and the impacts/opportunities of eGovernment initiatives towards the development of Dubai will be important considerations towards a successful implementation of eGovernment in Dubai.

A model towards the successful eGovernment implementation will be proposed that will be anchored on the Sheikh Mohammed's vision, theories of TAM, DOI and Lens of Bureaucracy, level of perceived usefulness and perceived ease of use, level of acceptance and level of completion of eGovernment, the factors/challenges towards a successful eTransformation of Dubai and the impact/opportunities of eGovernment initiatives towards the development of Dubai as well as best practices in E-Government. Chapter five discusses the programme to achieve a successful eGovernment known as the Al Bakr eGovernment Model of Implementation and is shown in **Figure 11**.

eGovernment in the next years will continuously transform the delivery of public services and the fundamental relationship between the public, business, government and government employees sectors.

Among the key benefits/advantages in eGovernment is to engage and enable citizens to articulate their views to influence the development of eGovernment and gauge their usefulness and implementation.

1.7. Outline of the Study

This study comprises six complementary chapters that converge on the subject – **Towards an eGovernment: the case of the Emirate of Dubai.**

Chapter One gives a backdrop to the study in its discussion of the evolution of the Internet's and ICT's role in the reformation of public services and government operations and a prelude of the early initiatives towards E-Government of Dubai. The Research Flow, shown in Figure 4 provides a paradigm and the structure of the study and identification of data that will be presented and analysed in succeeding chapters. To set up a common frame of reference, important terminologies are operationally defined. Moreover, the methodology section provides that this is a case study with descriptive research design. The scope and delimitation section delineates the purposive sampling and the selection of 1500 respondents among the key stakeholders of eGovernment initiatives of Dubai, namely: citizens/customers, business employees and government employees. Furthermore, outline of the study gives a brief summary of the chapters, and the tools of the research provide the primary and secondary sources of data.

Chapter Two examines the foundations and adoption of E-Government. It explores the Internet revolution and its catalytic role in the development of society, commerce and government, particularly its services and operations. The concept of eDemocracy and eParticipation is also presented in reference to how the Internet may be used to enhance democratic processes and provide increased opportunities to individuals and communities to interact with government and for government to seek input. A knowledge society and knowledge-based economy is also analysed, which has the goal of fulfilling societal needs, creating wealth and enhancing quality of life in a sustainable manner. Moreover, this chapter discusses electronic commerce or E-Commerce that has grown dramatically because of proliferation of the Internet. The E-Commerce boom in the private sector became the impetus for governments to improve efficiency of their services, adopt a more customer-oriented approach and save on operating costs. Furthermore, the discussion herein shows the fundamental changes from the traditional system to an E-Government system or from bureaucratic paradigm to E-Government paradigm. The implementation of new technologies such as computer, networking and Internet that have changed the capabilities of governments and redefined their organisational models and systems is expounded. Moreover, this chapter also focuses on the concepts, models, adoption and

implementation of E-Government and highlights a universal understanding and perception of E-Government. This chapter also describes the different models of E-Government from the perspective of governance and acceptance, and enumerates some proposed and needed steps to implement E-Government and assure its workability.

Chapter Three discusses the development and initiatives of E-Government in selected countries that have performed well in the E-Readiness rankings of the Economist Intelligence Unit (EIU) which presents yearly the E-Readiness rankings of nations around the world. There are six standard criteria by which EIU measures the E-Readiness rank of the state; these are connectivity and technology infrastructure, business environment, social and cultural environment, legal environment, government policy and vision, and consumer and business adoption. This chapter purposively selects the top ranked states in the world to examine and assess the best practice in E-Government. These countries are United States, Sweden, Australia, Hong Kong, Denmark, Singapore, Netherlands, Norway and Finland. However, the researcher has also purposively selected the Kingdom of Bahrain to assess a country similarly situated in the Arabian Gulf.

Chapter Four uncovers the eGovernment initiatives of the Emirate of Dubai. This section looks at the eTransformation of Dubai into a modern city with highly developed industries, businesses and a leading investment destination and focuses on the historical background and development of public services in Dubai and its modernising efforts to reform government's organisations. Furthermore, this chapter reviews government history, analyses and assesses the recent modernising progress that gradually builds up Dubai's modern infrastructure. This chapter also studies the government's rapid evolvement from a sheikhdom, with very limited resources, to the present position that Dubai achieved today. Likewise, the basic structure of the government and its step-by-step development from modest initiatives started by some of government bodies towards the full integration of departments is analysed. Accordingly, the government of Dubai decided to reduce its dependence on oil as a major contributor to the GDP and focus on other areas of the economy, leveraging on the Internet to reinvent government services and operations. Moreover, data gathered through the questionnaire surveys and the interview are presented and analysed in this chapter. The data that seek to answer the research problems are presented chronologically and in tabular form together with their analysis.

Chapter Five presents a formulated programme to achieve successful eGovernment. This takes into account the best practices and features of E-Government implementation in the world, the findings of the study and literature and theories analysed. This programme delineates rationalised actions to be undertaken by the Dubai Government to advance eGovernment initiatives further and more successfully. Moreover, in this chapter, the proposed programme is succinctly illustrated in a paradigm to show the major components or constructs of a successful implementation of E-Government initiatives in Dubai. These constructs include examination of Bureaucratic Structure which employs Max Weber's Lens of Bureaucracy, examination of factors influencing implementation (DOI and level of completion). Then, the next step is to assess the status of eGovernment implementation with reference to TAM. The fourth component of the model is the examination of the strategic framework related determinants. The fifth component of Al Bakr Model addresses the eGovernment impact assessment. The sixth level of the suggested model is aimed at studying the best practices of countries around the globe in the E-Government initiatives towards achieving a successful implementation.

Lastly, **Chapter Six** establishes the conclusions that answer the research problems and lay down significant recommendations for appropriate action and suggested future research.

1.8. Definition of Terms

In order to establish a common frame of reference in understanding this study, the following are contextually and operationally defined. The following are arranged in the order of their significance.

Bureaucracy

Bureaucracy is an organisational structure characterized by regularized procedure, division of responsibility, hierarchy, and impersonal relationships. The term can characterize either governmental or nongovernmental organizations. Bureaucracy refers to 'excessive adherence to rules and routine', very often applied by government departments.

Citizen Privacy

This refers to the right of individuals, groups, or institutions to determine for themselves when, how, and to what extent information about them is communicated.³¹

Dubai

It is the second largest Emirate in the United Arab Emirates, next to the capital of the country, Abu Dhabi. It is located along the southern coast of the Arabian Gulf on the Arabian Peninsula³².

eCustomer

This refers to citizens and businesses users who access government Web Portals to avail public services through electronic channels.³³

E-Government.

This is a general concept that refers to an academic discipline. It refers to the use of ICT by any government to provide citizens and organisations with more convenient access to government information and services and to provide the delivery of public services to citizens, business partners and those working in the public sector. According to the World Bank E-Government refers to ‘the use by government agencies of information technologies (IT) that have the ability to transform relations with the citizens, businesses and other arms of the government’³⁴

eGovernment

This is a brand and project name of initiatives of Dubai towards E-Government. It refers to the use of ICTs by Dubai government agencies to support government operations, engage citizens and provide government services.

eTransformation

This refers to stages of eGovernment development stages of delivery of government information and services from traditional bureaucratic form.

31 William J. McIver, Jr., Ahmed K. Elmagarmid, *Advances in Digital Government, Technology, Human Factors, and Policy* (Boston: Kluwer Academic Publishers 2002) 26-28

³² About Dubai

http://www.dubai.ae/en.portal?topic,hm_aboutdxb,0,&_nfpb=true&_pageLabel=misc 18.07.2008.

³³ Osborne D., Gaebler, T, *Reinventing Government, How the Entrepreneurial Spirit is Transforming the Public Sector*, (USA: Addison Wesley Publ. Co. 1992) p. 22

³⁴ Pallab, Saha, *Advances in Government Enterprise Architecture*, (IGI Global 2009: Hershey, New York) 31.

Information Privacy

This concerns the collection, use and disclosure of information, thus, addressed as a goal to be met through social policies and laws that guide the deployment and use of technologies. These social policies may in turn mandate certain technical policies.³⁵

Perceived usefulness

This refers to the degree to which a person believes that the use of a system will improve his/her performance.³⁶

Perceived ease of use

This refers to the degree to which a person believes that the use of a system will be effortless³⁷.

Status of eGovernment initiatives

This refers to the status of eGovernment initiatives of Dubai in terms of perceived usefulness and perceived ease of use.

Level of completion of eGovernment initiatives

This refers to the level of completion of eGovernment initiatives of Dubai in four stages or levels, namely: 1.) website/portal provides accurate, up-to-date and relevant information to customers, 2.) website/ portal allows informational queries and forms to be completed on line on government services, 3.) website/portal allows an exchange of value as government agencies interact directly with clients online, including recording, and storing sensitive information, and 4) website/portal integrates with government services based on needs and functions, and not on departments or agencies.

Examination of the Strategic Framework

This refers to the fourth component to be considered for a successful eTransformation of Dubai towards eGovernment. It emphasises on the strategic framework adopted by Dubai Government in the context of aligning eGovernment initiatives. This component suggests

³⁵ Daniel J. Solove, Marc Rotenberg, Paul M Schwartz *Privacy, Information and technology* (New York: Aspen Publisher Inc 2006) 1, 33-35

³⁶ Goldsmith, S., Eggers, W. , *Governing By Network: The New Shape of the Public Sector*, (USA: Brookings Institution Press 2004)

³⁷ Ibid.

using the SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis and PESOTLED (Political, Economic, Social, Organisational, Technological, Legal, Environment and Demographic) determinants to evaluate the current status of Dubai eGovernment and its preparedness. This component is designed to analyze the work environment of eGovernment.

Impacts/Opportunities of eGovernment initiatives towards the development of Dubai

This refers to the eight impacts/ opportunities towards the development of Dubai, namely: cost reduction, efficiency gains, quality of service delivery to clients, transparency, anti-corruption, accountability, increase the capacity of government, network and community creation, improve the quality of decision making, and promote the use of ICT in other sectors of society.

Al Bakr eGovernment Model of Implementation

This refers to a proposed programme to achieve a successful eGovernment. It comprises the six components: Bureaucratic structure as Lens of Bureaucracy by Max Weber, Diffusion of Innovation by Everett Rogers and level of completion, the factors/ challenges towards a successful eTransformation of Dubai as well as the impact of eGovernment initiatives and more importantly best practices in E-Government implementation around the globe and in the Emirate of Dubai.

G2C

This refers to a delivery model of eGovernment services from the administration or government towards the citizen. It is also known as Administration to Citizen or Government-to-Customer.

G2B

This refers to a delivery model of eGovernment services from the administration or government towards the business. It is also known as Administration to Business or Government-to-Business.

G2G

This refers to a delivery model of eGovernment services from the administration or government towards other administrations or governments. It is also known as Administration to Administration or Government-to-Government.

G2E

This refers to a delivery model of eGovernment services from the administration or government towards its employees. It is also known as Administration to Employee or Government-to-Employee.

E-Commerce

This is commonly known as electronic commerce which consists of the buying and selling of products and services over the electronic systems such as the Internet and the other computer networks.

Digital Divide

This refers to the gap between those people with effective access to digital and information technology and those without. In other words, it's the unequal access by members of society to information and communication technology.

E-Democracy

This refers to how the Internet may be used to enhance democratic processes and provide increased opportunities to individuals and communities to interact with government and for government to seek input.

Technology Acceptance Model (TAM)

This refers to the theory proposed by Davis, et al. that predicts the acceptability of an information system

Diffusion of Innovation Theory (DOI)

Proposed by Everett Rogers, this theory refers to the process by which innovation is communicated through certain channels over time among the members of a social system.

The Lens of Weber's Theory of Bureaucracy

This theory refers to the examination of E-Government implementation in the world in the light of key features of Weberian bureaucratic organisations.

Programme

This refers to a plan of activities to be done or things to be achieved.

1.9. Methodology:

1.9.1. Descriptive Case Study.

In this research, the Dubai eGovernment Initiatives are investigated as a case study and descriptive research methods are employed as the research design. As a descriptive research, the work describes the data and characteristics of the phenomenon being studied and tested. This research describes the phenomenon of eGovernment initiatives of Dubai with the aim of formulating a suggested programme for its successful implementation. According to Sevilla “the descriptive research design has been the general procedure used in studies that have for their primary purpose the description of phenomena”.³⁸ As a corollary to this, De Vaus noted that in this design “social researchers ask the fundamental type of research question: “What is going on?””,³⁹ and this is important as it is the basis for a sound theory”.⁴⁰ Hence, the description of the phenomenon of eGovernment initiatives of Dubai is critical for the formulation of a proposed programme for its successful implementation, deployment and future continuous improvement.

This study seeks to describe the occurrence of eGovernment of Dubai taking into consideration its status, level of acceptance, level of completion, factors/ challenges for a successful eTransformation, its impacts/ opportunities on the Emirate’s development and finally formulates a sound and viable programme for a successful eGovernment transformation of Dubai.

The study deliberately employs the purposive sampling method in choosing the subjects or respondents of the study. The purposive sampling is a deliberate sampling technique where the researcher selects a particular group or groups based on certain criteria or purposes or variables. In this study, purposive sampling technique was deliberately employed for convenience to cover the three segments of society, namely: citizens/customers, business employees and government employees who are the important stakeholders of eGovernment of Dubai. The criteria in the selection of the population of the study are equal distribution and coverage of the three segments of a society. The study administers three types of particular questionnaire-surveys that are empirically tested to these three groups of

³⁸ Sevilla, C. *Methods and Techniques of Research*. (Manila :Rex Bookstore, 2002) 56.

³⁹ De Vaus, D. *Research Design in Social Research*. (London: Sage Publications, 2001) 1-10

⁴⁰ _____, *Surveys in Social Research*. (London: Routledge, 2002) 19.

respondents, totalling 1,500 respondents equally distributed. This helped in controlling sampling error tolerance and increasing the confidence level in final statistical analysis. Moreover, this sampling method used is even more convenient given that the population of Dubai is about two million.

1.9.2. Questionnaire-Surveys Design.

Because of the unavailability of a prepared questionnaire, the researcher constructed questionnaire-surveys as main instruments in gathering data that are framed by the research problems of the study. Three guiding principles were considered when designing/developing the questionnaire.⁴¹ First, ensuring that response alternatives provide a sufficient range of responses to cover all respondents. The first four questions inquire general information about the respondent's bio-data. These include: Age, nationality, marital status, occupation, and education. Secondly, exclusiveness means that for each question a respondent can provide one and only one answer to the question. This applies to the rest of the questions and specifically question number five, which assesses the previous experience of the respondent. Third, response categories can be ordered from high to low with the same number of response alternatives either side of what might be considered the neutral position to show the level of approval or closed-choice answers. Hence, *Likert* scales were used in measuring the status that reflects a particular attitude or opinion. Furthermore, this approach was found easy to answer and was used in the questionnaire for sets of items as five points scale. To determine factors affecting the reliability, validity and accuracy of the survey data, the items were pretested on a try-out group not included as subjects. The questionnaire was also validated by five advisers as well as experts in research. The test included eight indicators, namely: concept clarity, sufficient inclusive, correspondence to the subject matter/topic, showing consistency rather than contradiction with other questions, a reasonable range of variation, correctness and accuracy, preciseness and exactness, and finally items in each concept, apply specifically to the topic. After pretesting and before final administration, improvements in the questionnaire were made based on the comments and suggestions of the try-out group and advisers. The validation instrument is shown in **Appendix no. 12**. The final version of the questionnaires were reformulated and made ready for administration to respondents. The responses that were gleaned from the questionnaires retrieved were carefully tabulated, analysed and interpreted to evaluate how respondents interpret the question's meaning. Improvements

⁴¹ David De Vaus, *Surveys in Social Research*, 5th Edition, Australia: Routledge, 2002.

included: describing the aims of the survey, rephrasing some items, and adding more answers to some items in the survey. Other enhancements incorporated question flow, estimated time and language complexity. All the above mentioned made a greater variety of types of questions and helped research avoid monotony.

A similar approach was applied to construct the face-to-face interview questionnaire. Six open-ended questions format was guided by the research questions/problems which correspond to specific arguments. These include: perceived usefulness, ease of use, completion level and acceptance level. High eGovernment officials were given the chance to discuss the challenges facing eGovernment implementation and finally were asked about their views concerning alternatives solutions and opportunities available

1.9.4. Findings of the Preliminary Testing.

The researcher conducted questionnaire pretesting with a group of five individuals who resemble those to whom the questionnaire was finally given. This assisted the researcher in understanding the concerns of the people who are being questioned and how they might interpret particular questions. The questionnaire flow was checked to verify if the questions fitted together. It was helpful also to time the survey to gain some idea of how much time was needed for an average person. It was necessary to make it as shorter as much as possible as insure that an accurate budgeting could be completed. Based on the descriptive rating and validity indicators, the findings of the preliminary testing of the questionnaires were tabulated. **Table 42** shows the content validity of the questionnaire for Citizens/ Customers with eight indicators as mentioned earlier in the validation instrument. The ratings were converted to a score on a 100-point scale for easier interpretation. The overall average of the Citizens/Customers was 4.84 or 96.8%. **Table 43** shows 4.87 or 97.4% overall average for Business Employees. **Table 44** shows Government Employees 4.92 or 98.4%. Table 45 shows validity for structured interview 4.88 or 97.6%.

1.9.3. Main Method of Administration.

The fieldwork plan was made to administer the questionnaire to all respondents by the researcher in two modes: 1) Face-to-face self-administered interviews 2) Field Survey-Questionnaire administered by trained/professional interviewers. A structured interview guide was also constructed and sent by email to respondents as a brief to introduce the

survey prior to interview sessions. Data from the officers of eGovernment of Dubai was also structured in accordance with the research problems of the study. While face-to-face interviews requests were declined by 67% of high eGovernment officials of the research population, 33% of those eGovernment officials accepted the face-to-face administration option. Using the second mode, the researcher outsourced dispatching of 1500 questionnaires plus 150 extra copies of questionnaires for the purpose of contents quality control, none-responsive cases and other common consistency check criteria during the administration process. This helped the researcher to save time and avoid the need for re-dispatching the survey-questionnaire and reduced the variation of the degree of heterogeneity of the outcomes.

1.9.4. The Empirical Research and Analysis:

The statistical treatment used was the descriptive analysis using the percentage, frequency count, and the mean scale rating. As reflected in the research problems, the status of eGovernment initiatives are measured in terms of frequency counts and percentage distribution. The level of completion and the level of acceptance of eGovernment initiatives are described in terms of mean scales. Moreover, the factors/challenges for a successful eTransformation of eGovernment and its impacts/opportunities for Dubai's development are calculated also in terms of mean scales. Lastly, the formulation of the eGovernment model of implementation is based on the analysis the findings of the study along with the best features and practices of eGovernment and implementation of E-government in other countries. The Statistical Package for Social Sciences (SPSS) is used to facilitate the computation of the needed data for interpretation.

1.10. Scope and Delimitation of the Study

This study is confined to the eGovernment initiatives of the Emirate of Dubai, particularly its status in terms of perceived usefulness and perceived ease of use, level of acceptance and level of completion. Likewise, the factors/ challenges for a successful eTransformation of Dubai towards eGovernment and the impacts/ opportunities of its eGovernment initiatives towards its development are also ascertained in Chapter Four. Moreover, this study lays down a strategic programme/ model to achieve a successful eGovernment based on the findings and conclusions of the study and integration of the best practices of E-government and the eGovernment of Dubai.

The inquiry is conducted from 1999-2009 and focused on three groups of respondents totalling 1500 evenly distributed – the general public, the business sector and the government sector. Purposive sampling and stratified sampling method are employed considering that the present population of Dubai is approximately 2 million⁴², and increases by 22% each year or by nearly 300, 000 people.⁴³

⁴² Dubai Statistics Centre
<http://www.dsc.gov.ae/DSC/Pages/home.aspx> 12.09.2008..

⁴³ “Dubai population increasing by 22% a year”. *Malaysia Sun*,
<http://story.malaysiasun.com/index.php/ct/9/cid/3a8a80d6f705f8cc/id/267122/cs/1/> 15.12.2008.

1. 11. Tools of the Research

The form and content of this research are limited and shaped primarily by the data gathered through the questionnaire-surveys, structured interview guide and analysis of government statistical data and materials, literature and studies available and relevant to the research focus.

The primary and secondary resources for conducting this study are the following:

- Theories and literature on E-Government and eGovernment of Dubai published in hard copies and on the Internet.
- Relevant literature concerning different aspects of government developments in Dubai.
- Official Government reports and studies in the public domain, especially those related to the E-Government projects.
- Newspapers, magazines, journals and special reports, both in English and Arabic that relate to E-Government and eGovernment of Dubai.
- The published census series of Dubai government from 1996 to 2003.
- Published data and statistics related to Information and Communication Technologies.
- The publications and studies of international organisations related to the subject of this research.
- Legislation and decrees related to E-Services and modernisation progress in the public sector in the Emirate of Dubai.
- The questionnaires, field-work and interviews carried out specifically for this research.
- Personal experience.

1.12. Conclusion

This chapter presented as background the escalating role of ICT in the daily lives of people, the changes in the conventional rules of doing business, improvements of public services and government operations. It also initially discussed the socio-technological position of the paper in the discussion of eGovernment concepts, models and processes. Furthermore, it prepared Dubai's breaking ground to launch its initiatives towards

eGovernment. This research rationalises its existence as a future invaluable source of reference and guide towards the successful eGovernment transformation of Dubai.

The research problems presented here serves as signposts towards the realisation of the objectives of this study. The main research problem is to determine the important considerations for Dubai towards eGovernment. It will specifically address the status of eGovernment initiatives in terms of perceived usefulness and perceived ease of use, level of acceptance and level of completion. Likewise, the factors/ challenges for a successful eTransformation of Dubai towards eGovernment and the impacts/ opportunities of its eGovernment initiatives towards its development are also ascertained. Moreover, this study lays down a strategic programme/ model to achieve a successful eGovernment based on the findings and conclusions of the study and integration of the best practices of E-Government and the eGovernment of Dubai.

In the research hypotheses of this thesis, important considerations towards a successful implementation of eGovernment in Dubai are the status of perceived usefulness and perceived ease of use, the level of acceptance and level of completion of eGovernment initiatives of Dubai, the factors/challenges towards a successful eTransformation of Dubai and the impacts/opportunities of eGovernment initiatives towards the development of Dubai. Furthermore, a model towards the successful eGovernment implementation is called as the Al Bakr eGovernment Model of Implementation will be proposed that is composed of the Bureaucratic Structure of Dubai Public Sector, theories of TAM, DOI and Lens of Bureaucracy, level of perceived usefulness and perceived ease of use, level of acceptance and level of completion of eGovernment, the factors/challenges towards a successful eTransformation of Dubai and the impact/opportunities of eGovernment initiatives towards the development of Dubai as well as best practices in E-Government. Chapter five discusses this programme and is shown in **Figure 11**. eGovernment in the next years will continuously transform the delivery of public services and the fundamental relationship between the public, business, and government. Among the key benefits/advantages in eGovernment is to engage and enable citizens to articulate their views to influence the development of eGovernment and gauge their usefulness and implementation.

The outline of the study offers a road map of the complementary chapters that present the discussion of concepts, data and models that were analysed to achieve the research

objectives. Moreover, salient terminologies are provided in the definition of terms to present a common frame of reference in understanding in the study.

The section on methodology establishes that this research is a case study of Dubai towards eGovernment. Questionnaire-surveys were formulated, validated and empirically administered to gather the needed data. The study was conducted from 1999-2009 and focused on three groups of respondents purposively sampled totalling 1, 500 evenly distributed – the general public, the business sector and the government sector. Based on the findings of the study, and analysis of best practices of E-Government initiatives in the world and eGovernment of Dubai, a model of eGovernment implementation is proposed.

The tools of the research are primarily the data gathered through the questionnaire-surveys, structured interview guide and analysis of other primary and secondary sources that include government statistical data and materials, literature and studies available and relevant to the research focus.

CHAPTER II

THE FOUNDATION AND ADOPTION OF E-GOVERNMENT:

2.1. Introduction.

The focus of this chapter is on the foundation of the E-Government's concept and its application development to empower public sector to enhance the quality of their deliberative resources and leverage the number of opportunities to use them in the governing process. In its first part, the chapter explores the socio-technological context to correlate ICT and the Internet revolution and its impact on societies in the networked communities. The chapter examines the Internet potential for E-Commerce and E-Government. The chapter also determines the role of the ICT and the Web as an Enabler of eTransformation. The chapter discusses also emerging concepts like E-Commerce, E-Participation and E-Democracy, and Virtual Organisation. The chapter explains the Knowledge Society or as it is called "Information Society" as a product and Knowledge Based Economy as a tool in very significant structural developments within the globalised environment. A key success factor of the knowledge economy is that recognising the relation between knowledge and education for an ever-changing environment. The Digital Divide is caused by lack of useful information and knowledge in ICT fields.⁴⁴ The end of this section discusses this matter in further details.

The second section of this chapter introduces E-Government, the transformation of public services and discusses a customised plan of E-Government. We look at the government online and the changes towards E-Government. This section also explores E-Readiness criteria related to the adoption of E-Government, the models of E-Government, and the stages of E-Government. We conclude from this chapter that traditionally, governments around the world, especially in developed world, are the main investors in ICT infrastructure and they play a significant role in Information Communication Technology innovations and applications.

⁴⁴ Pippa Norris, *Digital Divide: Civic Engagement, Information poverty, and the Internet Worldwide*, (UK: Cambridge University Press 2003) 3, 26

2.2. The Foundation of E-Government

2.2.1. The ICT and Internet Revolution

The ICT and Internet revolution has began with cables. According to Gromov in his book *Roads and Crossroads of Internet History*, the basic foundation of E-Government is traced to the beginnings of the information age that really began in 1866 with a cable. In 1858, the Atlantic cable which was actually undersea telephone cables was established to carry instantaneous communications across the ocean for the first time⁴⁵. Though this was a landmark event; it was, however, a technical failure as it remained in service for only a few days. However, subsequent cables were successful and these became the first medium of instantaneous communication across borders.

In 1957, the USSR launched Sputnik, the first artificial earth satellite⁴⁶. In response to the launch, President Dwight D. Eisenhower established the Advance Research Projects Agency (ARPA), an organisation that united some of America's most brilliant people and developed the United State's first successful satellite which was made in just 18 months – the Explorer-I⁴⁷. Several years later ARPA began to focus on computer networking and communications technology. According to Kazmierzak M. in his book *Internet History*, Dr Licklider, who heads ARPA's research in improving the military's use of computer technology, outlined in 1963 a vision in a memo about a time when communities of people with a common interest would be able to discuss online.⁴⁸ Five years later, in 1968, ARPA built the packet-switching for a worldwide network and successfully connected together a few geographically dispersed computers over a shared network; this computer network became known as the ARPANet⁴⁹.

In 1972, Ray Tomlinson sent himself an email between two computers in his office and after a year wrote the basic email message and read software⁵⁰. In 1973, Bob Metcalfe

⁴⁵ J., R., Okin, *The Internet Revolution , the Not-For-Dummies Guide to the History, Technology, and the Use of the Internet*, (USA: First Ironbound Press 2005) PP 15-19, 33, 53-64.

⁴⁶ Ibid 7-12, 40-49

⁴⁷ Ibid

⁴⁸ Kazmierzak, M. *Internet History*.

<http://mkaz.com/ebeab/history/> 21.09.2008.

⁴⁹ ARPANet –The First Internet

<http://inventors.about.com/library/weekly/aa091598.htm> 15.02.2009

⁵⁰ Philip M. Parker, *Email, Webster's Timeline History 1697-2007* (ICON Group International Inc. 2009)

developed Ethernet technologies which began as an outline of his thesis at Harvard⁵¹. One can note that the development of Ethernet allowed coaxial cable to move data extremely fast and this became a crucial component to the development of LANs. Furthermore, according to McQuillan, and Walden, this packet satellite project went into practical use and SATNET, Atlantic packet Satellite network, was born. This network linked the United States with Europe⁵². Incidentally, in 1975, the first personal computer, the MITS Altair 8800 was released ; this first PC were created by two young men from Harvard who moved across the street from MITS, and stayed up all night writing code for the Altair⁵³. These men were Paul Allen and Bill Gates.

In 1979, USENET (the decentralised news group network) was created by Steve Bellovin, a graduate student at University of North Carolina, and programmers Tom Truscott and Jim Ellis who were based at UUCP⁵⁴. Moreover, the creation of BITNET, by IBM, "Because its Time Network", introduced the "store and forward" network. It was used for email and listservs. In 1983, every machine connected to ARPANET had to use TCP/IP which became the core Internet protocol⁵⁵. Also, the University of Wisconsin created Domain Name System (DNS) which allowed packets to be directed to a domain name, which would be translated by the server database into the corresponding IP number⁵⁶. This made it much easier for people to access other servers, because they no longer had to remember numbers.

The abilities that ARPANet demonstrated especially with electronic mail urged numerous communities to develop networks. Also growing rapidly were numerous local area networks (LANs), due to Metcalfe's Ethernet technology. The LANs along with PCs and workstations in the 1980s allowed the burgeoning Internet to flourish. In 1985, the Internet consisted mainly of email and some other applications which allowed communication, and file sharing across the networks. According to Jeremy M. Norman in his book: *From Gutenberg to the Internet*, between 1985 and 1988, CERN, the European Laboratory for

⁵¹ Bob Metcalfe

<http://www.ibiblio.org/pioneers/metcalfe.html> 08.02.2009

⁵² J. McQuillan, D, Walden, The APRA Network Design Decisions, Computer Networks, Vol. 1, No 5, August 1977, pp 243-289

⁵³ MITS Altair 8800

http://www.csif.cs.ucdavis.edu/~csclub/museum/items/mits_altair_8800.html 13.07.2009

⁵⁴ IT Core: Internet

<http://cs.gmu.edu/cne/itcore/internet/timeline.html> 12.01.2009

⁵⁵ A Social History of Bitnet and Listserv

<http://www.computer.org/portal/web/csdl/doi/10.1109/85.841135> 15.07.2009

⁵⁶ Internet Protocol: Domain Name System

<http://computer.howstuffworks.com/internet-infrastructure6.htm> 14.06.2008

Particle Physics in Geneva, expanded TCP/IP throughout their network CERNET. In January 1989, CERN opened its first external connections to the Internet⁵⁷. This was needed by Tim Berners-Lee, a CERN researcher who wished to try and implement something he had been working on throughout the 1980s, his "hypertext ideas", which became the foundation of the World Wide Web. Hypertext allows document creators to insert links and names to point to other relevant items⁵⁸.

According to www.thinkpink.com, in early 1994 at the University of Washington, in an academic gathering to discuss Internet and World Wide Web, Brian Pinkerton introduced a small single-user application to find information on the Web, called The WebCrawler. In its first release on April 20, 1994, it had a database containing documents from over 6000 different servers on the Web⁵⁹. It quickly became one of the Web's more popular search engines, as well as its first. Citing www.docs.yahoo.com, also in April 1994, two students at Stanford University, David Filo and Jerry Yang started a guide to keep track of their personal interests on the Web. They named this guide "Yet Another Hierarchical Official Oracle" (Yahoo!)⁶⁰. As their lists of links grew to unmanageable sizes, they converted their pages and links to databases, with some customised software they wrote. This software allowed users to add and update links also. In early 1995, they were offered a place for their site on Netscape's larger computers, which allowed Yahoo! to grow into the most popular site visited on the Web and has become the most profitable and popular online Web service. Citing www.blooberry.com, also in 1995, Netscape Navigator 1.1 was unveiled which became the most popular navigator at that time available on the net, and Sun released Java development kit, a programming language tailored for the Web, with its write once run everywhere architecture. It wasn't until late 1995, after their release of Windows 95 in August, that Microsoft entered the browser market with their Internet Explorer 1.0.⁶¹

The Internet became at once a worldwide broadcasting capability, a mechanism for information dissemination and a medium for collaboration and interaction between

⁵⁷ Jeremy M., Norman, *From Gutenberg to the Internet: A Source Book on the History of Information Technology* (USA:Historyofscience.com 2005) p. 3-8, 39

⁵⁸ Internet Pioneers: Tim Berners-Lee
<http://www.ibiblio.org/pioneers/lee.html> 28.12.2008

⁵⁹ Finding What People Want: Experiences with the WebCrawler
<http://www.thinkpink.com/bp/WebCrawler/WWW94.html> 17.08.2008

⁶⁰ Yahoo! History
<http://docs.yahoo.com/info/misc/history.html> 16.06.2009

⁶¹ Browser History
<http://www.blooberry.com/indexdot/history/netscape.htm> 15. 02. 2009

individuals and their computers without regard for geographical location. The new information age is not only founded on a mechanical technology but more importantly on an intellectual technology and the new conceptions of time and space goes beyond the boundaries of geography. According to www.internetworldstats.com, as of 2008, the world has 1, 463, 632, 361 internet users, that is 21.9% of the entire global population. China has the most Internet users with 253, 000, 000, while US followed with 215, 088, 545. However, the percentage of population of Internet users for China is just 19% while US is 71.4%. Countries with the highest percentage are Netherlands, 90.1%; New Zealand, 80.5%, and Norway, 87.7%. UAE has 1, 708, 500 internet users with 38.4% of its population connected to the web⁶².

As discussed in the ICT timeline revolution as in **Appendix 14**, ICT together with the Internet greatly improved government operations and enable new government services. Quoting Kramer, K. and King, J. in their research “*IT and Administrative Reform: Will E-Government be different*”, ICT and the Internet will offer immense arrangements of leverages and strengths to government organisations facing increasing demands, shrinking resources, and in many cases a fragmented political environment. ICT and the Internet can be used to make critical improvements in efficiency and effectiveness and to create truly innovative government responses to challenges. However, ICT and the Internet are not in themselves sufficient to yield the desired developments. They are just general-purpose engines that can enable reform efforts, but unless the other factors required for reform are in place, their role is immaterial⁶³. One can infer that both ICT and the Internet have brought so much benefit to many organisations and many sectors, and there is nothing to preclude government organisations from enjoying such payoffs from thoughtful IT investment and implementation. One should note however that IT investment and implementation are not in themselves sufficient to achieve an E-Government transformation as there are legal environment, social and cultural environment, and government policy and vision that should be attended too as well.

⁶² Internet Usage Statistics
<http://www.internetworldstats.com/stats.htm> 23.09.2008.

⁶³ Kramer, K. and King, J. “IT and Administrative Reform: Will E-Government be different?” ed., Donald Norris. *E-Government Research: Policy and Management* (US: IGI Publishing, 2008)14.

2.2.2. The Technology and Social Changes

According to Lukas in his book *Social Change, Technology and the Future*, social change is endemic to *Homo sapiens* and plays a very important role in the ever dynamic transformations of their relationships and associations. In earlier times, anthropologists have speculated that Neanderthals did not persist as a species because they were unable to cope with rapid social changes than the better-adapted Cro-Magnons, who were too well adjusted to their ecological and social environments⁶⁴. Furthermore, social changes brought about the Gemeinschaft—Gesellschaft Transition which indicates the movement from the agricultural to the industrial.⁶⁵ As societies progressed from the agrarian model of ecology and social organisation, a new society of machines, cities and industry emerged. In his work, *The Coming of Post-Industrial Society*, Sociologist Daniel Bell describes a world of flexible production, new markets, economic and social transformation, a world in which technology is more prevalent.⁶⁶ It is to be noted that other characteristics of post-industrial society are the transformation of an economy based on goods to one based on services, as well as the focus of society on knowledge and information, especially for understanding the future.

Philosophers and other theorists have, throughout time, assumed that there were driving forces that drove society onwards. This evolution has been linked always to some kind of scientific invention that changed or improved living standards through some innovative applications in both government and private sectors. From light bulbs and lasers to computers and mobile communications, there are plenty of inventions that have remarkably changed how people live and organisations perform. Workplace and governments have also significantly become productive with the introduction of newer equipment that brought about faster and more efficient capability of computing, delivering services and accomplishing tasks.

According to Chris Phillipson in his book *Reconstructing Old Age*, the general outline of modernity has been summarised by Leonard as progressive movement of society and is associated with what has been described as modernity or modernism which has its origins in the enlightenment at the end of the 18th century and is characterised by three major

⁶⁴ Lukas, S. *Social Change, Technology and the Future*.
<http://www.ltconline.net/lukas/nssp/cpt15.htm> 11.05.2008.

⁶⁵ Gemeinschaft to Gesellschaft
<http://www.answers.com/topic/gemeinschaft-gesellschaft> 05.11.08.

⁶⁶ Bell, Daniel, *The Coming of Post Industrial Society*, (USA: Basic Books 1999) page 43

features, namely: the power of reason over ignorance, the power of order over disorder and the power of science over superstition.⁶⁷ These three features were regarded by many scholars as universal values and fundamental beliefs that provided the basis upon which humanity was able to achieve progress and developments. According to Nobel in his book *Post Modern Thinking: Where is it taking Social Work*, it was through the period of enlightenment that enabled the emancipation of humanity to take place from ignorance, poverty, insecurity and violence.⁶⁸

In the industrial age, the innovation of railways and airlines completely changed society and business by opening up distant markets in a previously inconceivable way, allowing companies to reach new customers and suppliers. Moreover, the carriage of freight by rail and plane boosted economic efficiency and added to national and business growth. This has benefited all and sundry as governments added regulations and stability to the new infrastructure. We are now in the Information Age, which is also known as the Computer Age or the Digital Age which is characterised by the ability of individuals to process information and gave birth to a new economy that is based on manipulation of information. In the beginning, human beings have always communicated with one another, from the first primitive smoke signals to tom-tom beats to semaphore flags to electrical codes of telegraph and telephone and now the touch screen and multi-functional cellular phones. Each of these innovations precipitated new ideas that brought together nations and people that created a synergistic world of more innovations. Indeed, the explosive entry of technology into every facet of life has changed how people live, how they work, how companies do their work and how governments function and serve their constituents.

The inventions of the telegraph, telephone, radio and computer set the stage for the unprecedented integration of so much capability. According to Edward Cornish, in his book *The Coming of Information Age*, telecommunications and computer technologies have changed our lives more than other fields of technological developments.⁶⁹ Nowadays, every government is trying to cut costs and meet the growing demands from its constituents for responsive and swifter technologies and self-service systems that promise to ease the interactions between the public and government organisations. Hence, mounting pressures on government are unprecedented to build more sophisticated,

⁶⁷ Chris Phillipson, *Reconstructing Old Age: New Agenda in Social Theory and Practice* (UK: Redwood Books 1998) page 31

⁶⁸ Noble, C. *Post Modern Thinking: Where is it taking Social Work*, Journal of Social Work, University of Western Sydney, Australia, Vol. 4, No. 3, 289-304 (Sage Publications 2004)

⁶⁹ Cornish, E. *The Coming of the Information Age*. The Futurist. 34(6), 2001.

advanced systems, including providing safe and secure self-service interactions and more Web-based access which has resulted in an accelerated move to modernisation.

However, the history of new developments of computer technology in government and business realms is full of examples of advances that initially didn't work with existing systems; this includes mainframes not communicating with PCs, and Websites that don't connect effectively with back-end and back-office systems. Concurrently, the costs of simply maintaining ICT have continuously drifted higher. A research entitled *Government IT: Finding Path to Modernisation* shows that something like 80% of current ICT resources goes on the maintenance of existing ICT operations and systems.⁷⁰ But it is interesting to note that there is a bigger cost of not doing anything than maintaining ICT. This is what Lance Knowlton revealed – there is a high cost to doing nothing. Many people have misconceptions or erroneous beliefs in thinking that it won't cost them anything if they just keep their ICT just the way it is, living with their current legacy systems. However, there is really a high cost to just staying put. The legacy platforms they are spending a lot of money on maintaining are outdated and the proprietary vendors who produced them are fading away, all of which drives the costs up further. Hence, the state of doing nothing costs an organisation much more. The risks to holding onto legacy systems are many including software which is rife with inflexible applications that seriously reduce agility; this makes it very difficult for government ICT to integrate applications across different government agencies. Moreover, these legacy systems need highly skilled and often highly paid personnel, supported by proprietary hardware and software vendors. These proprietary vendors lack products with open standards, and so they are raising the price of their products to make up for the shrinking pool of new and current customers.⁷¹

To avoid the high costs of maintenance and corresponding risks as described above and to fully exploit the powers of ICT, government and business sectors must modernise their ICT infrastructure by moving to open standards or using service-oriented architecture (SOA).⁷² For governments in particular, this will increase efficiency and transparency and result inevitably in the transformation of cost-effective and quality government service delivery. Citing www.computerworld.com, Oracle particularised some best practices to

⁷⁰ Government IT: Finding the Path to Modernisation.

http://www.computerworld.com/pdfs/oracle_igov_wp.pdf Accessed 28.04. 09.

⁷¹ Ibid.

⁷² Thomas Erl, *Service Oriented Architecture SOA, Design Patterns*, (USA: Prentice Hall 2009) 26, 48

move to modernisation: these include 1.) An integration strategy that takes current data and puts SOA on top in order to access existing data via Web services, 2.) Use of COTS (commercial-off-the-shelf) to replace the legacy coding, 3.) Rehosting which refers to migrating existing legacy platforms to open platforms, 4.) Rearchitecting which refers to extracting legacy artifacts into models, and lastly 5.) Automated migration which refers to transforming from mainframe to a Web portal database⁷³. One should note that though governments face an arduous challenge of modernisation as they grapple with the costs of upgrading and improving, as well as the time to sufficiently modernise, many proponents, however, believe that the threats to productive operations continuity, and the risks in not modernising government ICT, are far, far greater.

2.2.3. The Networked Community

The Internet represents one of the most successful examples of the benefits of sustained investment and commitment to research and development of information infrastructure. There is one and only one reason for having the first network “survival”. Beginning with early research in packet switching, the government, industry and academia have been partners in evolving and deploying this exciting new technology. According to Gralla in his book *How the Internet Works*, the developments in this domain have made aggressive moves when the private sector brought it into the commercial world where it was driven by motives of enhancing the commercial applications.⁷⁴ In its early beginnings, the network was only for text that allowed researchers and engineers to work cooperatively online in doing their experiments; or engaging online exchanging information or extending their experiments. According to www.princeton.edu, to the US government, the early intended use of the Internet was to enable them to make a quick reaction to an atomic attack. US Defence was spreading the control centres or duplicating the command and control centres by having replication of the system infrastructure which manages atomic weapons not only on a national scale but over continents as well⁷⁵.

According to Quittner Joshua and Michelle Slatalla in their book: *Speeding the Net*, during the short history of personal computers and by 1994, the Netscape Company in California had introduced the a "killer application Browser", a software program that granted easy

⁷³ Ibid.

⁷⁴ Gralla, P. *How The Internet Works*, (California Davis Press, 2002) 96.

⁷⁵ Accessibility and Integrity of Networked Information

<http://www.princeton.edu/~ota/disk1/1993/9302/930218.PDF> 13.05.2009

access to the Internet for everyone with a personal computer with the bonus of sound and imaging⁷⁶. One can note that this browser has made possible for everyone with a PC to have Internet access. Even more, it created the new business of bringing the Internet directly into the home for a monthly fee. Pioneer Internet service providers connect any computer through telephone lines to the Internet by providing connection, server and browser software. By 2003, the Internet connected about 220 million host computers, 693 millions of users and about 838 millions of telephone lines.⁷⁷ From this point on, the Internet started to have a shape in terms of infrastructure. The Internet and the new communication infrastructures differ radically from those of the previous decade, which were primarily for business transactions; the new system especially brings in the ordinary citizen as a user and customer. In other words, the new communications infrastructure emphasises interaction and participation and extends the medium enormously with its hundreds of millions of interconnections. The Internet multiplies the circulation of information and provides enormous access to the sources of information in a way never before known, and furthermore, multiplies the number of affinity groups by uniting people with likeminded interests and common professions across national and international borders.

According to Habib in his research *Empirical Prediction of Computer- Network Evolution*, these new interactions on the Web amount to social networks, one of the consequences being an increase in the importance of social capital influence⁷⁸. This is different from other capitals, namely the physical capital which basically refers to the control of goods and resources, the financial capital which refers to the command of money, and the human capital which refers to the acquisition of new skills and knowledge through education. Citing Garcia, T. et al. in their book: *Democracy in the Electronic Government Era*, social capital is the awareness of information and acquiring connections.⁷⁹ Fukuyama in his book *Social Capital and Civil Society* added that this social capital constitutes a cultural component of modern societies, which in other respects have been organised on the basis of formal institutions, the rule of law and rationality. Building social capital has typically

76 Quittner, Joshua and Michelle Slatalla. *Speeding the Net: The inside story of Netscape and how it challenged Microsoft*. New York: Atlantic Monthly Press, 1998.

77 Year Book of Statistics 2007

<http://www.itu.int/net/home/index.aspx> 10-13-2008.

78 Habib, Sami. "Empirical Prediction of Computer- Network Evolution".

ed, Indranil Bose. *Breakthroughs Perspectives in Network and Data Communications Security, Design and Applications*. (USA: IGI Global, 2009) 176-189.

79 Garcia, T. et al. "Democracy in the Electronic Government Era".

ed, Winfried Lamersdorf, et al. *Building the E-Service Society: E-Commerce, E-Business and E-Government*. (Boston: International Federation for Information Processing, 2004) 98-107.

been seen as a task for economic reform; but unlike economic policies or even economic institutions, social capital cannot be so easily created or shaped by public policy.⁸⁰ Societies and community members create the need, as a social capital, with the transformation to new technology. In the early 1960s until the early 1980s, back office applications were served by mini and mainframe servers which needed a team of engineers to run and maintain them. The real boom started in 1983 when Microsoft and IBM jointly introduced the personal computer and workstations. The wave had reached its zenith when the Internet started in 1993 and the networked society had gained better connectivity across the continents. According to www.infoacrs.com, on June 2009, the Internet World Stats estimates that 1,668,870,408 people are using the Internet, that is 24.7 % of the world population.⁸¹ This supports the basic assumption that the Internet represents a fundamental and extensive driver of change that has left few areas of our lives unaffected.

A study by Stanford University, California, USA, of 4000 respondents with a list of 17 common Internet activities, showed that 90% of all Internet users are e-mailers.⁸² Moreover, the most widespread use of the Internet today is as an information search utility for products, travel, hobbies and general information. Virtually all users interviewed responded that they engaged in one or more of these information gathering activities. A little over a third of all Internet users report using the Web to engage in entertainment such as computer games (such as online chess, role games and the like). Thus, the current Internet is also emerging as an entertainment utility. Consumer to business transactional activity purchasing, stock trading, online auctions and e-banking are fast becoming popular Internet activities.⁸³ One can infer that proximity no longer needs to be the primary determinant of whom we sell to, purchase from, or consider as part of our community. Changes on all fronts are occurring much and consequently, basic civic and social values are also transforming. **Figure 5** gives details of the research on Internet Usage Trends at Stanford University and shows that the six most popular uses of the Internet are email with 90%, general information with 77%, surfing with 69%, reading with 67%, hobbies with 63% and product information with 62%. One can observe that information is the common

⁸⁰ Fukuyama, F. *Social Capital and Civil Society*.
(US: George Mason University, 2001) 214-227.

⁸¹ Internet Statistic 2009
<http://infoacrs.com/i/internet.html> 24.10.2009.

⁸² The Internet Study
http://www.stanford.edu/group/siqss/Press_Release/press_detail.html 26.08.2008.

⁸³ Ibid

denominator of the prevalent use of the Internet – whether communicating information or getting information.

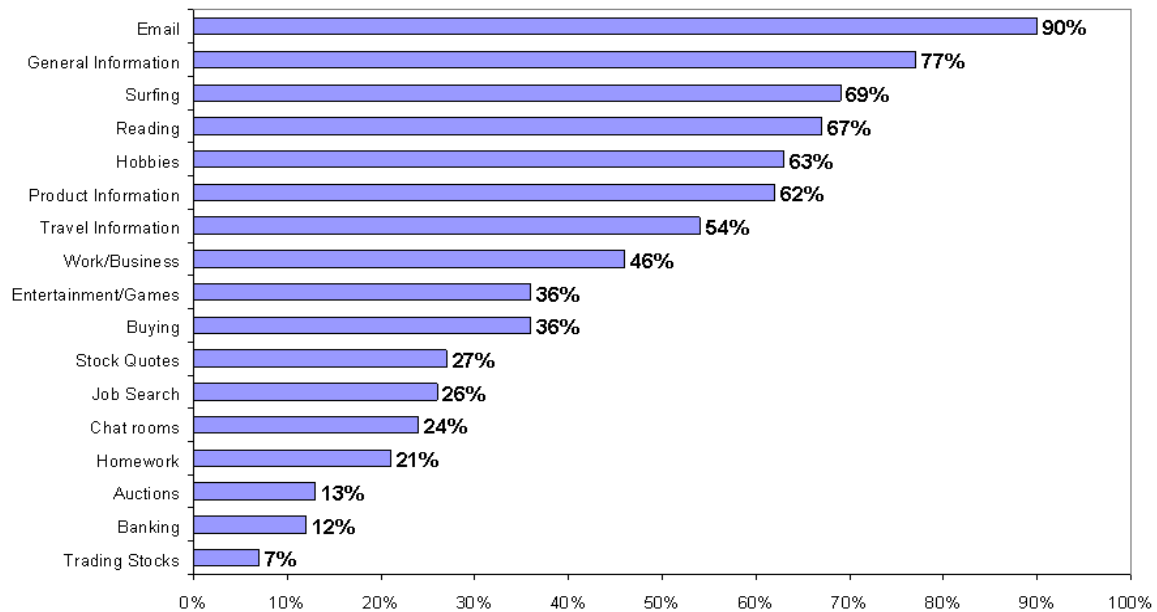


Figure 5. Internet Usage Trends⁸⁴

2.2.4. The Internet Potential for E-Commerce and E-Government

According to www.users.globalnet.org, Information Technology and business are two different life forms, often found yoked together in a quasi-symbiotic relationship.⁸⁵ One can infer in this context, there is an existence of the evolution and correlation of IT and business that is changing and evolving over time and linked with causal influences in both directions. The Internet has led to a host of new and exciting applications such as email, the World Wide Web, instant messaging, digital file sharing, E-commerce, and many more. Nowadays, commerce has become increasingly dependent on Internet activities and has enormous impact and influences on the global economy. The prevalence of electronic mail, chat rooms, personalised websites, forums and live journals are all indicative of the many ways people utilise and maximise this evolving communication tool.

Yet for all the changes that the digital economy has brought, the potential of the Internet is greater still. According to Atkinson, et al. in their Report, *Unleashing the Potential of the*

⁸⁴ Internet Statistics and Demographics
http://www.stanford.edu/group/siqss/Press_Release/press_detail.html 11. 24. 2005

⁸⁵ Evolution
<http://www.users.globalnet.co.uk/~rxv/sebpc/econotions.ht> 17.07.2009.

High Speed Internet, the Internet has yet to fulfil its promise of a true revolution as ubiquitous use and the development of powerful new applications and services are limited by a lack of bandwidth, especially in the developing world and even more limited by the digital divide⁸⁶. The importance of expanding the access of developing countries to the Internet and addressing the issues of digital divide has been recognised by governments and international agencies, such as the World Bank and United Nations Agencies, as there is increasing consensus and realisation that the Internet and related ICT technology should be regarded as imperative strategic national infrastructure. As cited in *The e-Government Imperative*, ICT usage in government has often been driven by the need to reduce the drain on resources, either to reduce overall spending or to allocate funds to higher priority areas. Mass processing tasks, distributed networks of service outlets, payment processes and internal public administration operating processes such as procurement, payroll and human resources all depend on ICTs to operate and enhance and will continue to be the target for efficiencies.⁸⁷ One can infer that major savings can be obtained by transforming business processes through the help of ICT. More recently, the focus has turned to the Internet and online applications in areas such as online data collection to reduce data entry costs, the use of E-Procurement and other e-commerce applications, and reductions in government hard-copy publication.

According to Osborne, D. and Gaebler, T. in their book *Reinventing Government – How Entrepreneurial Spirit is Transforming the Public Sector*, the sharing of common data within and between agencies to reduce collection of data and improve data reconciliation is emerging as a major focus of efforts to reduce costs within the government and provide considerable benefits to customers of government services.⁸⁸ One may deduce that the corresponding result to citizens in dealing with a ICT-and-Internet-enabled government is revolutionary in the transformation of relationships. According to Mossberger, K. et al. *Digital Citizenship: The Internet, Society and Participation*, hence, people with the capacity to deal with governments are in these way digital citizens. Digital citizenship is the ability to participate online by digital citizens who use the Internet regularly.⁸⁹

⁸⁶ Atkinson, R. et al. Unleashing the Potential of the High Speed Internet. September 2002.
[http:// www.ppionline.org/documents/broadband.pdf](http://www.ppionline.org/documents/broadband.pdf) 11.24.2005.

⁸⁷ The e-Government Imperative

(France: Organisation for Economic Cooperation and Development (OECD), 2003) 23-30.

⁸⁸ Osborne, D. and Gaebler, T. *Reinventing Government – How Entrepreneurial Spirit is Transforming the Public Sector*. London: Addison Wesley Publication, 1992)129- 146.

⁸⁹ Mossberger, K., et al. *Digital Citizenship: The Internet, Society and Participation*.

(US: Massachusetts Institute of Technology, 2008) 1-20.

Citing www.mason.gmu.edu, before 1935, a computer was a person who performed arithmetic calculations. In 1945, the same definition referred to a machine rather than a person. The modern definition of computer is based on von Neumann's concept of the same referring to it as a device that accepts input, processes data, stores data and produces output.⁹⁰ This device, together with the power of the Internet radically transforms the delivery of public services and the systems of its operations. Agar, in his book *The Government Machine: A Revolutionary History of the Computer*, proclaimed this as the mechanisation of government where he describes the deployment of machines to gain control over state actions and depicts government as machine-like with civil servants cast as components of a general purpose "government machine". He argued indeed that today's general purpose computer is the apotheosis of the civil servant.⁹¹ One can infer that above contention provides a clear definition of the significant role of computing in the efficiency of public service and government operations. The changing capacities of government have depended on the implementation of new technologies, and this has depended on a vision of government and a fundamental model organisation. ICT and the Internet are pivotal stimuli for E-Commerce and E-Government that provides us with easy transactions over the phone or over the Web whether filling and submitting forms or making online payments. Henry Lucas, in his work, *Inside the Future – Surviving the Technology Revolution*, said that individuals, organisations and countries that resist technological change will be left behind.⁹²

2.2.5. The ICT and the Web as an Enabler of Transformation

Public sector managers, government leaders, civic reformers and socially concerned business people all took notice in 1992 when *Reinventing Government*, by David Osborne and Ted Gaebler came off the press. The authors prescribed a customer-driven government that empowered citizens by pushing control out of the bureaucracy malaise and a guide for those who wanted to build more effective public administrations. The authors foresaw a more entrepreneurial, mission-driven government with a civil service composed of

⁹⁰ History of Computing

<http://mason.gmu.edu/~montecin/computer-hist-web.htm> 09.23.2008.

⁹¹ Agar, J. *The Government Machine: A Revolutionary History of the Computer* (History of Computing) (US: MIT Press, 2003) 15.

⁹² Lucas, Henry. *Inside the Future: Surviving the Technology Revolution*. (US: Praeger Publisher, 2008) 67-70.

knowledge workers who functioned as a team focused on outcomes not inputs.⁹³ In this context, the business customer service model is applied to government as citizens are seen as customers and the administrative role is streamlined by converting policy alternatives into market choices.

Furthermore, a reinventing-government movement took hold in many countries that directed to major transformations in government operations and delivery of public services which were put to competitive tender, outsourced and privatised. By that time, the focus was primarily on reducing costs. However, very little attention was paid to the ability of the government to meet the growing needs of individual citizens and businesses, the government's customers. Consequently, the inflexible bureaucrats, the long waits and the multiple complex forms are all still there and dealing with government remains a hassle.

Public administration has not become more customer-focused largely because little effort was ever made to induce culture change within government so that employees would share information, work as a team and become knowledge workers. The people at the top echelons of government have never taken notice of calls to reinvent government and remain stuck in the political ways of personalised confrontations, indifference and the low expectations of initiatives of government leadership. Their interest remains low unless there are enablers to energise their transformation. The reinvention of government is badly in need of an enabler that fosters teamwork and the sharing of information that's useful to business and relevant to citizens' everyday lives, addressing their personal needs and circumstances. The ICT and Internet are enablers of these transformations.

Citing Geray in his book *Dubai E-Government Initiative: Concept, Achievement and the Future Pillars of Success*, the fundamental business process of today's governments are to see that the customers and/or constituents are served in the most logical manner. The data are captured, processed, transmitted, stored and reported efficiently⁹⁴. One can identify that a government, businesses and individuals constitute the key entities in today's digital economy. The interaction among these entities plays an essential economic role resulting in exchange of goods and services. This transformation is the driving force in improving effectiveness and efficiency of services. According to *The Network Revolution and the*

⁹³ Reinventing Government

http://government.cce.cornell.edu/doc/viewpage_r.asp?ID=Reinventing_Government 16.11.2008.

⁹⁴ Geray. O. *Dubai E-Government Initiative: Concept, Achievement and the Future Pillars of Success*, (United Nations Development Programme /Organisation for Economic Cooperation Development UNDP/OECD Conference 2005) 245-255.

Developing World, openness has become a defining characteristic of modern societies. It is no longer a second-tier goal to be pursued only if it does not interfere in efficient administration. Good governance requires setting the right environment for business and citizens to prosper. In this context, E-Government is one of the critical factors in achieving and maintaining competitive advantage.⁹⁵

According to *UN E-Government Survey 2008: From E-Government to Connected Governance*, it is easy to assume that new technology is a cure-all for society's ills. Governments especially have a history of putting faith in large IT projects only to have them operating late with sky-high budgets, and in the failing there crashes also public confidence. Decades ago, computers and WWW were as complex as a labyrinth and reserved for a few who were either rich or smart⁹⁶. One can infer that nowadays, the use of ICT and the Internet is likened to the possession of cellular phones that are not anymore considered luxuries but are necessities. The Internet is proving to be something unique and different. It is enabling new ways of communicating, working, shopping, learning and playing. Now it can enable a new way of governing. Increasing the use of ICT tools and applications is leading to transformational shifts in public policy, processes and functions. E-Government is being deployed not only to provide citizen services but for public sector efficiency purposes, improving transparency and accountability in government functions and allowing for cost savings in government administration. ICTs are changing the way the government does business for the people. According to Kosiur in his book *Understanding Electronic Commerce*, E-Government is seen to be a lever for the transformation of government. Innovations in information and communication technologies have also provided an opportunity for effective working modalities across government agencies.⁹⁷ One can observe whereas in the early stages of ICT, it was primarily viewed as an important tool in improving efficiency, nowadays as governmental organisations become more complex, the role of ICT has also evolved to enable department linkages and government coordination.

⁹⁵ The Network Revolution and the Developing World
www.itu.int/wsis/documents/background.asp?lang=en&theme=d 10.19.2008.

⁹⁶ UN E-Government Survey 2008: From E-Government to Connected Governance.
(New York: United Nations, 2008) 1-12.

⁹⁷ Ibid.

2.2.6. The Virtual Organisation and the Advantage of ICT

As information becomes digital and information technology becomes an even greater part of the business world, many envisage the birth of virtual organisations. According to Kosiur, a virtual organisation may take the form of an entity composed of geographically dispersed workers who share their work and communicate only by electronic means, with little, if any, face-to-face contact. Companies which have embraced technological advancements have taken this idea to heart, and electronically bonded together associates in various parts of the country. Other larger corporations have created virtual teams to get a project done without moving the personnel to a central location.⁹⁸ One should note that virtual organisations are not restricted to only those processing digital information but can be a means to bind together different companies involved in manufacturing, for instance. Such an organisation allows manufacturers to stay in one location, but to access and share manufacturing data in other locations. Subassemblies can be created in different locations, but the progress (and problems) with their manufacture can be coordinated by means of digital data exchanged over networks such as the Internet.

Kosiur in his book, *Understanding Electronic Commerce*, defined a virtual organisation as any organisation which is continually evolving, redefining, reinventing itself for practical business purposes and unrestricted to a geographical physicality. Such organisation has the following critical characteristics, namely: institutionalised organisational change demonstrably focused strategic direction and purpose, enabling individuals to optimise their potential to contribute by creating new forms or shapes, developing dynamic communication, creating cultures which support continual organisational adaptation. Finally, Kosiur enumerates activities that a virtual organisation proactively engages in: gathering data (both from inside and outside the organisation), information analysis, formulating strategies for success rather than survival, exploiting technology, powerful goal setting, measurement in all areas, entrepreneurial skills, influencing effectively (rather than over-use of power), empowering people throughout the organisation, helping others to take risks and managing ambiguity⁹⁹. One may conclude that Information Technology is considered as a strategic tool for innovation and improving work environments. Many countries envisaged the potential of ICT and the Internet as a way of advancing their

⁹⁸ Kosiur, D. *Understanding Electronic Commerce*.
(US: Microsoft Press, 2003) 203-204.

⁹⁹ *Ibid*, 4.

industries' infrastructures to maximise their efficiencies and maximise production, as well as build their competitiveness in the digital economy. The phenomenal growth of ICT and the Internet is unimaginably infinite and vast.

2.2.7. The E- Commerce

According to www.bestdigitalsigns.com, electronic commerce, or e-commerce or eCommerce, consists of the buying and selling of products and services over electronic systems such as the Internet and other computer networks¹⁰⁰. One can observe that since the proliferation of the Internet, the amount of trade conducted electronically has grown dramatically and spread around the globe. A wide variety of commercial transactions are conducted through the Internet such as transfer of funds, management of supply chains, marketing, online transaction processing and electronic data exchange. Citing www.ntchosting.com, electronic commerce also involves everything from ordering digital content for immediate online consumption, to ordering conventional goods and services, to other services, to facilitating other types of electronic commerce.¹⁰¹ On the consumer level, electronic commerce is mostly conducted on the World Wide Web where an individual can go online to purchase anything from books, grocery to expensive items like real estate. An individual can also do online banking, make online bill payments, buy stocks, transfer funds from one account to another and initiate wire payment to another country. On the institutional level, big corporations and financial institutions use the Internet to exchange financial data and facilitate domestic and international business.

As quoted in Carter and Belanger in their research *The Utilisation and eGovernment Services: Citizen Trust, Innovation, and Acceptance Factors*, electronic commerce is the mother of electronic government. As many business entities learned to harness the powers of ICT and the Internet, and take advantage of its enormous benefits, many have wondered whether governments which after all, seek to improve their operations and delivery of public services might benefit too. Many researchers have concluded that E-Government is a follow-on from E-Commerce since both of them support the electronic mediation of transactions over great distances and both also require consumer/citizen trust because of

¹⁰⁰ E-Commerce

http://www.bestdigitalsigns.com/e_commerce.html 13.05.2008.

¹⁰¹ eCommerce (electronic Commerce) – Toady's Newest Trading Practice.

<http://www.ntchosting.com/internet/ecommerce.html> 24.09. 2008.

the absence of face-to-face interaction. In addition, both are based on Internet technology designed to facilitate the exchange of goods, services and information between two or more parties.¹⁰² According to Tung, in his research *Adoption of Electronic Government Services among Business Organisations in Singapore*, utilising ICT and the Internet not only enables the business sector to reduce costs, increase profits and make their products more available to consumers, it can also help government agencies improve the efficiency of their services, adopt a more customer-oriented approach and save on operating costs.¹⁰³ Although E-Commerce and E-Government may have some commonalities, Al-Shery provides a comparison showing the main differences of both as shown in **Table 1**.

¹⁰² Carter, L. and Belanger, F. "The Utilisation and eGovernment Services: Citizen Trust, Innovation, and Acceptance Factors". *Information Systems Journal*, 15 (1) 2005, 5-6.

¹⁰³ Tung, L. "Adoption of Electronic Government Services among Business Organisations in Singapore". *Journal of Information Systems*. 15(2) 2005, 23-24.

Table 1
Main Differences between E-Government and E-Commerce¹⁰⁴

E- Commerce	E- Government
Refers to the commercial use of Internet technology to sell and purchase goods and services	E-Government focuses on their delivering their services to citizens without expecting profit
E-Commerce deals with private sector with more freedom for doing their own business	E-Government deals with the public sector which has many features including roles limited by legislation and complex accountability
E-Commerce is allowed to choose its customers	E-Government agencies are responsible for providing access to information and services to any citizen and the entire eligible population, including individuals with lower incomes and disabilities
Decision-making can be centralised and easy to make a decision than a public sector	Decision-making authority is less centralised in government agencies than in business. This dispersal of authority impedes the development and implementation of new government services.
Is designed to be accessible for whom able to achieve services.	The digital divide makes E-Government task of providing universally accessible online government services challenging
The commercial view is the main purpose for its adoption	The political nature of government agencies is a feature that distinguishes eGovernment from eCommerce
The goal is to obtain the profit and reduce the cost	In a democratic government, public sector agencies are constrained by the requirement to allocate resources and provide services that are “in the best interest of the public”

¹⁰⁴ Al-Shehry, Abdullah, et al, op.cit.. 5.

2.2.8 The E-Participation and E-Democracy

ICT does not only increase the provision of information to the citizen of a better informed citizenry but also promote an increased level of participation among the citizenry as well as the amount of government consultations with citizens. According to Coleman in his work, *Bowling Together: Online Public Engagement for Policy Deliberation*, there is a democratic deficit facing many governments and that the new technological advancements could contribute to a renewed faith in government bodies through the creation of a more transparent, interactive government engaged in wide dialogue with interactive citizenry.¹⁰⁵

One may note that the rise of ICT and the Internet could offer some hope for facilitating greater participation of the citizen by providing access to more government information and interactivity through use of online government services, thereby contributing to the creation of a more informed citizenry, a forum for the free exchange of ideas and the ability to share informed debate on issues of the day, input by citizens through online consultations into the decision-making process of government on those issues that directly affect them, and the ability to share information faster with like-minded groups and individuals, creating networks of community in order to influence legislators and public officials.

As noted by Clift in his research *E-Governance to E-Democracy: Progress in Australia and New Zealand*, E-Democracy refers to how the Internet can be used to enhance our democratic processes and provide increased opportunities for individuals and communities to interact with government and for the government to seek input from the community. This participation is less limited by geography, disability or community networks, and facilitates the access to information and provision of input by individuals and groups who previously had not been involved.¹⁰⁶ According to Riley in his book *The Changing Role of the Citizen in the E-Governance and E-Democracy Equation*, the Internet has in one respect brought about a decentralisation of power¹⁰⁷. One may note that in the ICT-and Internet-connected world, individuals can now make their own choices as which authoritative information sources they will accept. It may be argued that this leads to a greater democratisation of knowledge, empowerment of the individual and the potential for

¹⁰⁵ Coleman, S. and Gotze, J. *Bowling Together: Online Public Engagement for Policy Deliberation* 2003, <http://bowlingtogether.net/intro.html> 09.25. 2008

¹⁰⁶ Clift, S. *E-Governance to E-Democracy: Progress in Australia and New Zealand* 2001 <http://www.electronicgov.net> 09.24.2008.

¹⁰⁷ Riley, C. *The Changing Role of the Citizen in the E-Governance and E-Democracy Equation*. 2003 <http://www.electronicgov.net> 01.09.2008.

more informed interactions between the citizenry and organisation, including government. Moreover, because individuals now have ready access to a variety of information sources, governments have to compile and disseminate information in a competitive environment, due to extensive technologies on the Internet.

One should note that one of the primary functions of government has been the creation and dissemination of information. According to *UN E-Government Survey 2008: From E-Government to Connected Governance*, governments have always been considered to be the largest data resource in any jurisdiction because of their enormous data and information resources. Conceivably, the Internet is at this moment the largest library in the world given the billions of Web pages growing by millions everyday and copious information and data stored thereto. As a result, a citizenry that is able to seek and obtain information and knowledge from any place in the world through the internet will, in all likelihood, also expect more from the government. The E-Participation of the citizenry in formulation of public policies is also pivotal to establish more transparency by allowing them to use new channels of influence. However, for E-Participation to be successful and to be the norm, governments need to create an environment that allows citizens to voice their views online and, more importantly, to create a feedback mechanism which shows citizens that their views are taken seriously. This requires a collaborative trust between citizens that their government as well as being a robust structure also allows citizens access to decision makers.¹⁰⁸

Citizen engagement can help build and strengthen the trust relationship between government and citizens. This is fundamental to the achievement of good governance and the fulfilment of broader economic and social goals. In the absence of trust, the rule of law, the legitimacy of government decisions and specific reform agendas may be called into question. ICTs and the Internet can act as enablers to engage citizens in the policy process, promote open and accountable government and help prevent corruption. Citing *The e-Government Imperative*, citizen engagement at a basic level includes information, consultation and feedback by service users, but at a more advance level, it includes citizen engagement for policy making. Access to information, consultation and participation mechanisms can have a pervasive impact on promotion of good governance. In themselves, they identify willingness by governments and administrators not only to accept public scrutiny and accountability, but to actively facilitate it by improving the scope and

¹⁰⁸ UN E-Government Survey 2008: From E-Government to Connected Governance, op.cit.16.

efficiency of these processes. Opening up decision-making processes can improve the quality of decision by decision makers understanding the context and impact of options before them¹⁰⁹.

2.2.9. The Knowledge Society and a Knowledge-based Economy

Knowledge and innovation are becoming important values and are also significant factors in wealth creation. In fact, the wealth of countries and enterprises is increasingly shaped by knowledge and innovation capabilities. Hence, a knowledge society with a knowledge-based economy will have greater capacity and greater capability in obtaining a greater economy. According to Rincon in his book *Towards an Integrated Knowledge Society in Arab Countries: Strategies and Implementations*, the concept of a knowledge society is often used to denote a more advanced developmental state or to refer to a second-generation information society. Whereas an information society aims to make information available and provide the necessary technology, a knowledge society aims to generate knowledge, create a culture of sharing and develop applications that operate mainly via the Internet¹¹⁰. Hence, we reasoned that the goal of the knowledge society is to fill societal needs, create wealth and enhance quality of life in a sustainable manner through its effective and efficient use of information.

During the 1970s, the term information society emerged as an attempt to describe the revolutionary changes by industrial societies. However, in the twenty-first century, societies in developed countries have begun to stress the value of information, communication and knowledge for decision-making and action. As noted by Peter Drucker, in his work *Post Capitalist Society*, he described society as a place where capital and natural resources are no longer the only factors of production, but are being complemented by knowledge as a resource. To him, this is the second phase of industrialisation or informatisation¹¹¹. According to Rincon, this is the phenomenon that focuses both on information infrastructure and on information connectivity within the public realm, both of which have a tremendous impact on society.¹¹² One may note that the

¹⁰⁹ The e-Government Imperative., op.cit. 44-46.

¹¹⁰ Rincon, M. *Towards an Integrated Knowledge Society in Arab Countries: Strategies and Implementations*. (New York : UN, 2005) 3-15.

¹¹¹ Drucker, P. *Post Capitalist Society*.

http://www.innovationwatch.com/books/bks_0887306209.htm 11.06.2008.

¹¹² Rincon, M. op.cit. 16-21.

degree of penetration of related technologies is also highly relevant to the issue of knowledge societies. If these remain confined, knowledge societies will not flourish.

According to *The Economic Impact of ICT: Measurement, Evidence and Implications*, a knowledge society is a society that is characterised by a number of interrelated trends, including major advances in diffusing and using information and communication technologies (ICTs), increased emphases on innovation in the corporate and national context, the development of knowledge-intensive business service economies and knowledge management in addition to trends towards globalisation and economic structuring. These trends have superseded the traditional ingredients of economic growth that consist of capital, labour and natural resources which are no longer the only factors affecting national competitiveness. The knowledge-based economy phenomenon has certain central characteristics that include strong non-inflationary growth, low unemployment and rapidly increasing role for ICT and contributed restructuring of enterprises and markets.¹¹³ One may infer therefore that a knowledge society is highly dependent upon the creation and development of digital networks that transcend territory and geography. The economic growth of countries has been partially driven by the commercialisation of the Internet. Hence, the rolling out of digital networks worldwide provides an opportunity for the developing world to participate in global economic relations.

Moreover, the impact of networking on traditional economies has allowed the reorganisation of firms. Quoting Castells, in his work *The Rise of the Networked Society*, the basic unit of economic organisation can now be described as a network comprising a number of organisations.¹¹⁴ One may view that ICT can bring about new opportunities for economic revenue. Furthermore, the consequences of a shift towards an economy will dramatically change the sociology of communities of all kinds. There have also been changes in local and global economies as a result of the development of digital networks. This change has affected institutions, leading to changes in policy and changes in the functioning of institutions themselves. The development of a knowledge-based economy is not, however, based entirely on ICT. Success has been highly dependent on institutional, public policy, and also economic and socio-cultural factors. For this reason, the

¹¹³ The Economic Impact of ICT: Measurement, Evidence and Implications.
(Organisation for Economic Cooperation and Development (OECD) 2004) 5.

¹¹⁴ Castells, M. *The Rise of the Network Society*.
(New York: Harper Business, 2000) 45.

development and sustenance of a knowledge-based economy through the integration of the aforementioned factors, technology and people is essential.

Figure 6 shows the development and sustenance model of a knowledge-based economy. As a knowledge-based economy sustains the societal contexts of culture, institutions, economy and public policy, these factors develop and influence the knowledge-based economy, fundamentally forming a cycle of growth. When combined with investments in skills, organisational change and innovation, ICT has a far-reaching impact on economic productivity. The widespread diffusion of the Internet, mobile telephony and of broadband networks demonstrates how pervasive such technology is becoming. According to Rincon, there are three effects of ICT on economic productivity and growth, namely: they operate as capital goods which are investments in ICT infrastructure and networks that contribute to overall capital and helps raise labour productivity. They contribute to a more rapid productivity growth in the ICT-producing sector as a result of rapid technological process in the production of ICT goods and services, and the greater use of ICT contributes towards increasing the overall efficiency of firms, thereby raising productivity.¹¹⁵

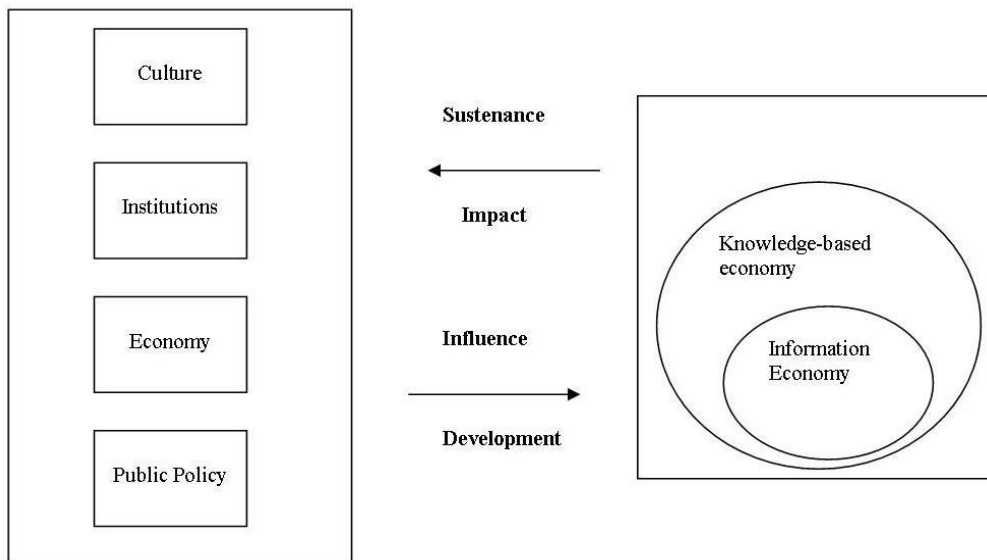


Figure 6.
Development-Sustenance model of a Knowledge-based economy¹¹⁶

¹¹⁵ Rincon, M. op.cit.

¹¹⁶ The Knowledge-Based Economy. Organisation for Economic Cooperation and Development (OECD)
<http://www.oecd.org/dataoecd/51/8/1913021.pdf> 17.07.09.

2.2.10. The Digital Divide

After the Internet came into the public domain and the World Wide Web exploded into history's largest repository of human knowledge, ICT and the Web hold the technology-utopian promise of broad collaborations in science and technology, transparency and efficiency in government, rationality of markets and shared understandings between peoples. Sadly, however, the sweetness of the fruit is not commonly shared by all. This is the digital divide. Citing www.edutopia.org, digital divide generally refers to the gap between people with effective access to digital and information technology and those without¹¹⁷. According to www.digitaldivide.net, digital divide may also refer to the unequal access by some members of society to information and communications technology, and the unequal acquisition of related skills thereto¹¹⁸. Hence, one may deduce that digital divide may include the imbalances in physical access to technology as well as the imbalances in resources and skills needed to effectively participate in an ICT-enabled environment and government. Quoting Compaine, in his book *The Digital Divide: Facing a Crisis or Creating a Myth?*, he explained that this inequality or gaps either refers to ownership or regular access to a computer, access to the Internet, broadband network access.¹¹⁹ According to Wilhelm, in his book *Digital Nation: Towards an Inclusive Information Society*, digital divide may refer to the inequality of usage of information technology fully.¹²⁰ Finally, as cited in www.e-society.org, it may also refer to the divide between peoples who are at ease in using the technology to access and analyse information and those who are not¹²¹. One may determine from the above definitions that digital divide has two critical components. First is the gap or inequality of access either physical, resources and skills and the second is the ICT.

The digital divide is a concept of multiple dimensions. According to Kling in his book, *Technological and Social Access to Computing, Information, and Communication Technologies*, he promised that it has a division of two aspects, a technical aspect referring to availability of infrastructure, the hardware, and the software of ICTs, and a social

¹¹⁷ The Digital Divide: Where We Are
www.edutopia.org/digital-divide 12.08.2009

¹¹⁸ The Digital Divide Network
<http://www.digitaldivide.net/> 15.05.09

¹¹⁹ Compaine, B. *The Digital Divide: Facing a Crisis or Creating a Myth?*
(Massachusetts: MIT Press, 2001) 28-57.

¹²⁰ Wilhelm, A. *Digital Nation: Towards an Inclusive Information Society*.
(Massachusetts: MIT Press, 2004) 133-142.

¹²¹ e-Society.org.mk - Key Concepts
<http://e-society.org.mk/portal/content/view/12/18/lang.mk/> 01.07.2009.

concept referring to the skills required to manipulate technical resources.¹²² On the other hand, according to Norris in his book *Digital Divide: Civic Engagement, Information Poverty, and the Internet World*, he suggested three divisions; his list includes a global divide revealing different capabilities between the industrialised and developing nations, a social divide referring to inequalities within a given population, and a democratic divide allowing for different levels of civic participation by means of ITCs.¹²³ Finally, according to Keniston in his paper *Introduction: The Four Digital Divides. IT Experiences in Indi, a* he distinguished four social divisions: those who are rich and powerful and those who are not; those who speak English and those who do not, those who live in technically well-established regions and those who do not and those who are technically savvy and those who are not¹²⁴.

The many discussions and perspectives on digital divide are primarily anchored on several concepts that have already been the ponderings of mankind even when civilisation has begun. According to Servon in his work *Bridging the Digital Divide: Technology, Community and Public Policy*, he declared that digital divide is a symptom of a larger and more complex problem – the problem of persistent poverty and inequality.¹²⁵ Accordingly, Mehrat, et al. in their work *The Internet for Empowerment of Minority and Marginalised Users*, they have identified four major components that contribute to digital divide that consists of socioeconomic status, income, educational level and race among other factors associated with technological attainment.¹²⁶

According to Cheung in his research *Identity Construction and Self-Presentation on Personal Homepages: Emancipatory Potentials and Reality Constraints*, another key aspect of digital divide is the global digital divide. The global aspect of digital divide is attributed to several factors that include country of residence, ethnicity, age, educational attainment and income levels.¹²⁷ One may infer that the global digital divide mirrors the existing economic divisions in the world. The global digital divide amplifies the gap

¹²² Kling, R. Technological and Social Access to Computing, Information, and Communication Technologies. http://www.gseis.ucla.edu/~howard/Tmp/Pacbell-policy/dara-dd_bibliography.doc 01.05.09.

¹²³ Norris, P. *Digital Divide: Civic Engagement, Information Poverty, and the Internet World*. (New York: Cambridge, University Press, 2001) 34-78.

¹²⁴ Keniston, K. *Introduction: The Four Digital Divides. IT Experiences in India*. (UK: Sage Publishers, 2004) 1-12.

¹²⁵ Servon, L. *Bridging the Digital Divide: Technology, Community and Public Policy*. (Malden: Blackwell, 2002) 25-36.

¹²⁶ Mehrat, B, et. Al. *The Internet for Empowerment of Minority and Marginalized Users*. www.cci.utk.edu/node/2657 01.06.09.

¹²⁷ Cheung, C. *Identity Construction and Self-Presentation on Personal Homepages: Emancipatory Potentials and Reality Constraints*. (New York: Oxford, 2004) 53-68.

between economies around the globe where countries with a wide availability of Internet access can advance considerably their economies on a local and global scale. As of today, jobs, education, civil services and work are directly related to the Internet and ICT, in that the advantages that come from their usage are so significant to a person, business and government. In countries, where the Internet and other technologies are not readily accessible, education is faltering. Undereducated people and societies that are not benefiting from the information age cannot be competitive in the global economy. This premise leads to non-ICT- enabled countries suffering greater economic turmoil and ICT-enabled countries furthering their economies.

Several projects and organisations seek to bridge the gap of digital divide worldwide. This includes open standards and free open source software, distribution of inexpensive laptops/sub notebooks and low-cost Wi-Fi. International cooperation between governments has also begun, aimed at dealing with global digital divide. Quoting Warschauer in his book: *Reconceptualising the Digital Divide*, the United States Agency for International Development (USAID) funded state-of-the-art equipment for Egyptian education. The brilliance of recipients in using such equipment has caused such equipment to increase its use throughout the years. Now, Egyptian society is more computer literate and knowledgeable about computers than it used to be.¹²⁸ Furthermore, the United Nations proclaimed in 2006 a World Information Society Day which will take place yearly on 17th of May¹²⁹. One may note that United Nations has established a World Information Society Day to help raise awareness of the possibilities that the use of the Internet and other information and communication technologies can bring to societies and economies, as well as ways to bridge the digital divide. Sheikh Mohammed Bin Rashed Al Maktoum stated in his speech at Davos "We must do this with economic, political, educational and technological challenges in addition to fighting illiteracy and administrative corruption. It is also imperative that we increase the participation of the people by developing parliamentary institutions, while emphasising transparency and fighting corruption"¹³⁰.

¹²⁸ Warschauer, M.. *Reconceptualising the Digital Divide*.

<http://web.archive.org/web/20050424022613/http://itrs.scu.edu/klong/warschauer.pdf> 01.06.2009.

¹²⁹ World Information Society Day

<http://www.un.org/depts/dhl/events/infosociety/index.html> 10.03.2009.

¹³⁰ Sheikh Mohammed Bin Rashed Speech at the World Economic Forum, Davos, 26th January 2001

2.2.11. ICT Security, Privacy and Surveillance:

As discussed earlier in this chapter, the Internet became a global public space that is open, affordable and accessible to all. The past few decades have witnessed dramatic changes in the way we shop, bank and carry out our daily business and activities in the new digital economy. This has resulted in an unprecedented proliferation of records and data. Digital technology enables the preservation of everything needs to be recorded with ICT technology in form of digital dossiers. According to Daniel J. Solove, in his book: *The Digital Person: Technology and Privacy in the Information Age*, he argues that communities were small and intimate. Personal information was preserved in the memory of friends, family, and neighbours, and it was spread by gossip and storytelling. Today the predominant mode of spreading information is through the language of electricity, where information pulses get exchanged between massive record systems and databases. As businesses and government increasingly share personal information, digital dossiers about nearly every individual are being assembled.¹³¹ This causes serious concerns with regard the information security and privacy. The gathered information about customers and citizens become quite extensive, sensitive and is being used in ways that profoundly affect people's lives. The question raised here is how, in an anonymous society of strangers, is trust possible. ICT increases tension between transparency and privacy aiming to maintain social order and trust. Governments around the world consider surveillance as a routine and unexceptional practice.¹³²

The art of surveillance has been practised throughout the history. Sun Tzu in his book: *The Art of War*, for example written in his book, in the fifth Century BC, contains a chapter on the Use of Spies, where he describes the different ways spies may be used to monitor enemy forces.¹³³ From earliest days of state surveillance in the sixteenth-century England, the aim was to consolidate state power against others, and to maintain the position of elites, rather than to use raw informational power to keep subjects in line.¹³⁴ The field “Surveillance studies” has grown rapidly over the past two decades; spurred by both rapid development in governance and new technologies on one hand and the

¹³¹ Daniel J. Solove, *The Digital Person: Technology and Privacy in the Information Age*, (USA: New York University Press 2004) page 1-3

¹³² Steven L. Nock, *The Cost of Privacy: Surveillance and Reputation in America* (New York: Walter Gruyter 1993), page 3-4

¹³³ Sun Tzu, *Art of War*, XIII. The Use of Spies, Translated by Lionel Giles
<http://classics.mit.edu/Tzu/artwar.html> 12/08/2009

¹³⁴ David Lyon, *Surveillance After September 11*, (USA: Polity Press 2003) page 25

emerging security initiatives in the theoretical explanation on the other. The term “Surveillance” refers to government effort to gather information about people from a distance, usually covertly and without entry into private spaces.¹³⁵ There are three types of surveillance namely: Communication Surveillance, Physical Surveillance, and Transaction Surveillance.¹³⁶ Communication surveillance is the real-time interception of communications. Physical surveillance involves real-time observation of physical activities. Observation of physical activities once reliant on naked eye observation and simple devices like binoculars can be now carried out with night scopes and thermal imagers, sophisticated telescopic and magnification devices, tracking tools and "see-through" detection technology. Transaction surveillance involves accessing recorded information about communications, activities and other transactions. Records of transactions with government, hospitals, banks, schools and other institutions until the 1980s usually found only in file cabinets are now much more readily obtained with advent of computers and internet. The technology employed by these systems often creates a unique identity for the user when he/she use them. Examples of these include: your telephone number, bank account, credit card number, car number and social security number. These unique identifiers can be used to track certain of people's actions by computer, creating a profile of activities that cause distrust in people's E-Transactions.

Today much government has been obsessed and resolved to use it for their national security threats. But the new surveillance has also increasingly been aimed at ordinary criminals, including those who represent on trivial threat to public safety. And more occasionally it has also visited significant intrusion on large numbers of law-abiding citizens – sometimes inadvertently sometimes not. Despite national and international agreement that give individuals rights to privacy and fair judicial process, the practices of surveillance is growing in complexity due to spread of electronic networks, to counter a variety of perceived threats to external or internal terrorism and the activities of organised crimes.¹³⁷ However, there are legitimate concerns about citizens rights to privacy versus the state national security concerns. Sheikh Mohammed stated that 'Responsible Freedom' is a gift of trust and responsibility.¹³⁸ Therefore, unfettered access to information could undermine national security and eventually social stability.

¹³⁵ Cristopher, Slobogin, *Privacy at Risk: the New Government Surveillance and the Fourth Amendment* (USA: University of Chicago Press) page 2

¹³⁶ Ibid

¹³⁷ Paul Mobbs, *Privacy and Surveillance*, GreenNet Civil Society Internet Rights Project, Rev. 1, April 2003 www.internetrights.org.uk 09/07/2008

¹³⁸ Sheikh Mohammed Bin Rashed Speech at the Media City's Inauguration, 20 January 2001

2.3. The Concept and Adoption of E-Government

2.3.1. The Concept of E-Government

Citing www.broadband-europe.eu, E-Government from electronic government, also known as e-gov, digital government, online government refers to the use of internet technology as a platform for exchanging information, providing services and transacting with citizens, businesses and other arms of government. E-Government may be applied by the legislature, judiciary, or administration, in order to improve internal efficiency, the delivery of public services, or processes of democratic governance¹³⁹. The Dubai School of Government defined E-Government as the use of information and communication technologies (ICT) in the public sector to provide government services and share information with society through electronic means.¹⁴⁰ One can observe that the E-Government phenomenon through the definitions given above strongly affects relations between the public authorities, civil society and the business community. There are many non-internet electronic government technologies. According to *Strategies for the Effective Implementation of e-Government Projects*, some non-Internet forms include telephone, fax, PDA, SMS text messaging, MMS, wireless networks and services, Bluetooth, CCTV, tracking systems, RFID, biometric identification, road traffic management and regulatory enforcement, identity cards, smart cards and other relevant applications, polling station technology (where non-online e-voting is being considered), TV and radio-based delivery of government services, email, online community facilities, newsgroups and electronic mailing lists, online chat and instant messaging technologies¹⁴¹.

As the definition suggests, one may infer that Electronic Government is the use of information technology, in particular the Internet, to deliver public services in a much more convenient, customer-oriented, and cost-effective in an altogether different and better way. It affects an agency's dealings with citizens, businesses and other public agencies as well as its internal business processes and employees. According to www.dubai.ae, the E-Government initiatives are being driven by the need for government to cut costs and improve efficiency, implement new procedures, improve decision making, liberalise

¹³⁹ Turn On More Accessible Mode

<http://www.broadband-europe.eu/Pages/GlossaryDetail.aspx?ItemID=35> 12.08.2009

¹⁴⁰ eGovernment. Dubai School of Government Web Portal

<http://www.dsg.ae/RESEARCH/eGovernment/tabid/83/language/en-US/Default.aspx> 21.07.2009.

¹⁴¹ Strategies for the Effective Implementation of e-Government Projects

<http://www.jbponline.com/article/view/1024/817> 03.09.08

government information, make savings, enrich the quality of life, meet citizen expectations and improve citizen relationships, facilitate economic development by creating motives for engaging in foreign direct investment, eliminate corruption, enforce democracy.¹⁴² According to Carter and Belanger in their book *The Utilisation of E-Government Services: Citizen Trust, Innovation, Acceptance Factors*, E-Government adoption is more than a technological matter as it is influenced by many factors including organisational; human; social and cultural issues which are important forces and they relate to the nature of government itself and its responsibility in society.¹⁴³ Therefore one may infer that the success of E-Government implementation is not solely on technological advancements but should also consider human capital, culture and the attributes of governmental organisations.

Dawes, in his book *Future of E-Government*, described E-Government as the use of information technology to support government operations, engage citizens, and provide government services. With this definition, she introduced four key dimensions that are aligned in the functions of government, namely: E-services which refers to the electronic delivery of government information programmes, and services often but not exclusively over the Internet; E-democracy that refers to the use of electronic communications to increase citizen participation in the public decision-making process; E-commerce that refers to the electronic exchange of money for goods and services such as citizens paying taxes and utility bills, renewing vehicle registrations and paying for recreation programmes, or government buying supplies and auctioning surplus equipment; and E-management that refers to the use of information technology to improve the management of government, from streamlining business processes to maintaining electronic records, to improving the flow and integration of information¹⁴⁴.

Allatah in his research, *E-Government Considerations for Arab States*, argued that there are four distinct stages in the movement towards E-Government, namely: posting information, two-way communications, exchange of value, and integrated service and exchange. He also presented three dimensions of E-Government, namely: Government to Citizens (G2C), Government to Business (G2B), and Government to Government (G2G).

¹⁴² Dubai E-Government Strategy

<http://www.dubai.ae/en.portal> 20.10.2008.

¹⁴³ Carter, L. and Belanger, F. "The Utilisation of E-Government Services: Citizen Trust, Innovation, Acceptance Factors". *Information Systems Journal*, 2005. 15 (1), 5-25.

¹⁴⁴ Dawes, S. *The Future of E-Government*. op.cit.

In the posting of information, governments set up Websites to put information online and customers can just browse and access as much information as they need. In two-way communications, customers are now able to access forms, fill them up and submit online. In the exchange of value, customers can make online payments and are able to transact online services. In the last stage where there is an integrated service and exchange, customers are able to fully transact online inter-department services in just one portal¹⁴⁵. Relevant to the dimensions of E-Government as given by Allatah, the initiatives of E-Government are directed towards citizens, businesses and government itself. This concept is similar to that of Holmes whose work, *E-Gov: E-Business Strategies for Governments*, developed the nomenclature of ABCs of eGovernment which refers to Administration to Administration, Administration to Business and Administration to Citizen¹⁴⁶.

The spelling of E-Government appears to be a free-for-all environment that is frequently dictated by peculiar interpretations that includes acronyms and abbreviations. A spelling may have a profound meaning and impact. A term that is spelled in two different ways may have two entirely different meanings as in the case of “World Wide Web” and “WorldWideWeb” (one word) or may have governance implications as the case with “Internet” and “internet”. Currently, eGovernment is spelled in a number of confusing ways – eGovernment, egovernment, eGov, E-gov, Egov, E-Government, e-Government, etc. Heeks recommends eGovernment (at the start of sentences) and e-government (lower case)¹⁴⁷. Misra, however, proposes E-government at the beginning of the sentence then e-government.¹⁴⁸ A succinct review of *eGov: eBusiness Strategies for Government* by Holmes reveals his preference for eGovernment.¹⁴⁹ Incidentally, the Web portal for Dubai uses eGovernment as a branding for its initiatives. The impact of spelling is elucidated further in this study as a distinction is made between E-Government and eGovernment. The former refers to the general concept of the usage of ICT of the government to improve its performance in government operations and delivery of public services. The latter, on the other hand, refers to a specific branding and campaign by the Dubai government in its adoption of E-Government technologies and methodologies.

¹⁴⁵ Allatah, Sami E-Government Considerations for Arab States.

<http://www.surf-asas.org/FocusAreas/DG/Resources/Papers/Egovenglish.PDF> 09.03.2008

¹⁴⁶ Holmes, D. *E.gov: -E-Business Strategies for Government*. (Bookwell: Finland, 2001) 13-25.

¹⁴⁷ Heeks, R. . eGovernment for Development, Basic Definitions Page. <http://www.egov4dev.org/egovdefn.htm> 20.09.2008.

¹⁴⁸ Misra, D. Select Aspects of Conceptual Foundations of E-government: Clearing the Fog for a Better Vision. http://www.iceg.net/2007/books/1/3_333.pdf 20. 09. 2008.

¹⁴⁹ Holmes, D. op.cit.

According to www.hdr.undp.org, while many agencies have made great strides to reduce costs, too often this has come at the price of cutting programmes. Today, government agencies are under pressure to save money while maintaining or even increasing their level of services to citizens and businesses. By using the Internet, the cost of processing transactions is greatly reduced, with savings in paper and printing, mailing and personnel¹⁵⁰. One can observe that online transactions have streamlined processes and lead to greater efficiencies with less human interaction. Among the primary reasons for inefficiency is that the basic model of government remains entrenched in the industrial age with a continued reliance on a centralised mass production of public services delivered only through vertical channels. Today, citizens have diverse needs that must cut across the underlying structures, so the Internet can be used as a collaboration tool for employees and departments. The most publicly visible way for the internet to improve the public sector is through its ability to reduce the time and effort required for citizens and businesses to comply with government rules and regulations. As people become aware of the power of the web and experience good service in the private sector, they will become less tolerant of poor, impersonal service in the public sector. If people can buy an airplane ticket over the internet, they will want to renew their vehicle registration the same way. If they can go online to check how their stocks are doing, they will want to go online to check their medical records. In the digital age, public services need to be instantly accessible, around the clock, either from home or work.

In due course, E-Government is more than renewing public licenses over the internet; it's about making the transition from the industrial society to a knowledge society. Businesses are already moving their services and transactions online, and increasingly they are choosing to invest only in areas that offer the infrastructure and business climate needed to succeed in the new knowledge economy. By embracing the Web itself, governments can make their municipalities, states, or countries interconnected and help their own firms step out and become part of the world's major markets, thereby contributing to their prosperity. Nowadays, many public sector organisations have websites, but these are used primarily as marketing devices to promote the image of a particular department or to raise public awareness with general information. Moreover, these websites are indiscriminately designed, the content is renewed infrequently and the information is simply a scanned reproduction of already printed material.. Some organisations provide more comprehensive

¹⁵⁰ New Technologies and the Global Race for Knowledge
http://hdr.undp.org/en/media/hdr_1999_ch21.pdf 24.04.2009

and dynamic information, with searchable databases and email services. Very few provide a variety of interactive transactional services. Rarely can a person log on to a government website and submit a form, make an appointment, inquire about a job, apply for social benefits, purchase a license or permit, pay a tax bill or a parking fine, all these in one integrated service online.

While the private sector entered the twenty first century transformed by E-Commerce, until now, however, the usefulness of the Internet has not induced the minds of most public officials to make its adoption an imperative action and integration in government. The public sector has not had the same incentive as the private sector to embrace the Web. Competition in particular hasn't driven governments online. Businesses have to make decisions to stay ahead of competitors and increase profits, whereas no equivalent market pressures bear down on public agencies. In government, making a right decision takes priority over making a fast decision. Government is generally slower to adapt to technological change because, out of necessity, it operates in a more risk-averse culture. The public sector is more accountable than the private sector for the money it spends and is bound by more and different laws; in areas of procurement, for example. It has to be more conscious of integrity, transparency and openness; it must seek political support for its projects, and ideology is often involved. Finally, the sheer size and complexity of government completely dwarfs most private companies.

Most popularly assume that E-Government is solely about delivering government services over the Internet or simply online government or Internet-based government. Dawes states that this prevalent supposition is very myopic for two reasons: first, it narrows the vision for E-Government and the wide range of governmental activities that are not direct services; nor does it recognise the usage of other technologies other than the Internet, and second, it oversimplifies the nature of E-Government, leaving the impression that a nicely designed, user-oriented website is the whole and end of the story and ignores the substantial investments that are needed in people, tools, policies, and processes. This fails to recognise that while the citizen sees E-Government from the public side of a website or email screen, "the real work of E-Government is on the other side, inside the government itself".¹⁵¹ The Dubai School of Government suitably advocates that E-Government is a

¹⁵¹ Dawes, S. The Future of E-Government.
http://www.ctg.albany.edu/publications/reports/future_of_egov?chapter=2 04.09.2008.

rapidly growing “socio-technical phenomenon.”¹⁵² Indeed, E-Government initiatives are more than the use of the Internet, but may also involve other ICT advances that may include mobile communications. Furthermore, E-Government is not merely just the set up of a portal and being able to transact online services, but involves the whole system and process of making government operations and delivery of public services efficient, transparent and cost-effective.

E-Government initiatives then are not merely transactional but transformational in the sense that they transform the relationship between government and its stakeholders. Atallah affirmed that E-Government adoption is altering the fundamental relationship between government and public, citizens and businesses in two ways, namely, E-Government is reinventing the business of government – through new ways of integrating information and making it accessible over the Web, engaging in procurement, and delivering services. And it also transforms the nature of governance by affecting the relationship and responsibility between the state and its citizens.¹⁵³

2.3.2. The Transformation of Public Services

Before the adoption of ICT and the Internet, governments provide their services through departmental counters, manned by countless employees. Citizens flock to government centres for forms, submission of forms or renewals of their public licenses; long queues were then a common sight. These traditional systems of public service have been perceived to be a breeder of red tape, anomalies and irregularities in governments. The adoption and implementation of E-Government initiatives have confirmed the motivation of governments to improve their public services and seek the satisfaction of their customers whether citizens or businesses. In this context E-Government is not just another way of doing things, it is a transformation on a scale that fundamentally alters the way public services are delivered and managed. It does not have a fixed developmental time line; it is evolutionary.¹⁵⁴

¹⁵² E-Government

<http://www.dsg.ae/en/main/egovernment.aspx> 09.09.2008.

¹⁵³ Allatah, S. E-Government Considerations for Arab States.

<http://www.surf-as.org/FocusAreas/DG/Resources/Papers/Egovenglish.PDF> 03.09.2008.

¹⁵⁴ At the Dawn of E-Government : The Citizen as Customer

http://www.deloitte.com/dtt/cda/doc/content/GPS_dawne-governmentUK.pdf 26.10.2008.

Many countries have made significant progress in upgrading its information technology infrastructure as they begin to perceive the projected benefits of the transformation of public services with the support of ICT and the Internet. Figure 7 shown below illustrates the flow of questions to E-Government transformation. As shown, the starting point is the impact of Internet on government in the developing world. Although the Internet revolution is offering tremendous benefits and opportunities to the public sector, some governments are still cautious of this revolution. It will be then too late for those governments that rigorously assess it, and the opportunity to steer the influence and outcome will be lost. Furthermore, Internet and ICT will offer major opportunities to reform government organisations. Although it presents significant threats and risks in transformation, the furtherance of transformation strategies and policies can improve government organisation in its transformation initiatives towards E-Government.

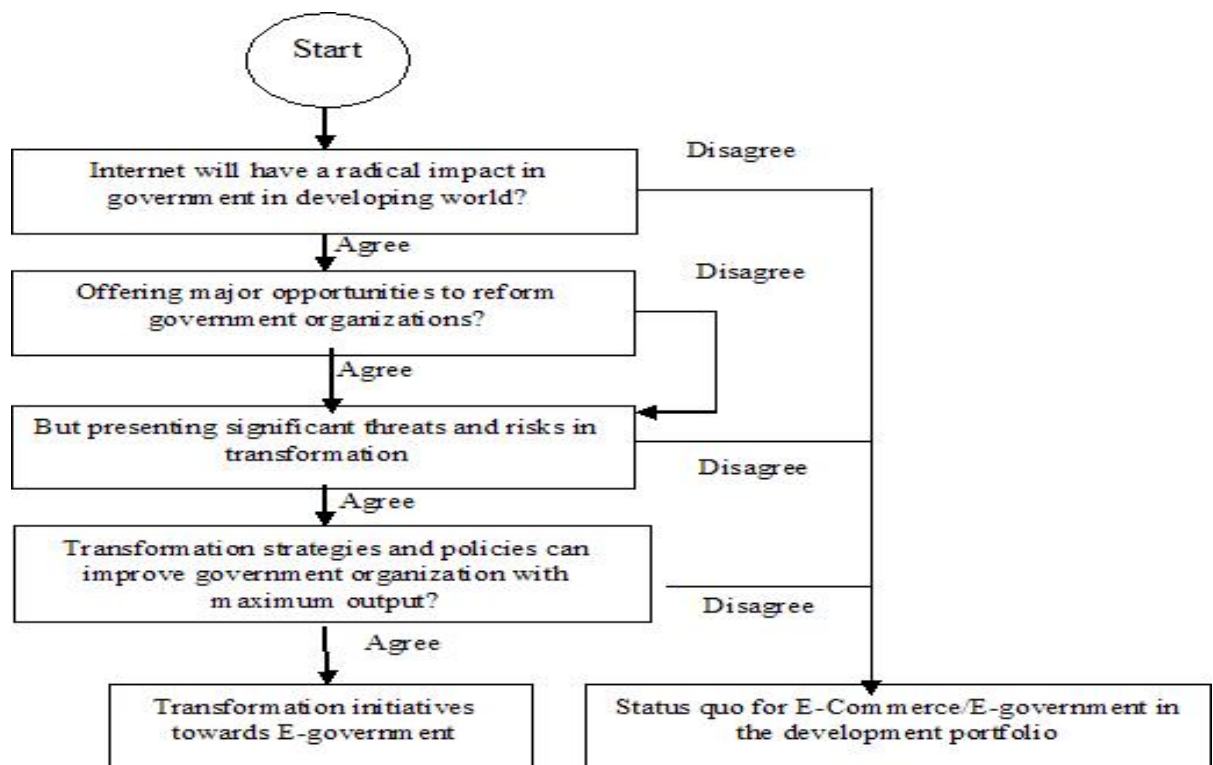


Figure 7. Flow of Questions to E-Government Transformation

ICT and the Internet play a significant role in the transformation of public services. Through the years, government has improved its operations and delivery of public services

through the adoption of ICT and the Internet. According to Wolfe, in his book, *Transforming Accountability for Government IT Projects*, in creating a government that works better and costs less there is a strong connection between public sector reform and Information Technology.¹⁵⁵

The systematic use by government agencies of information and communications technologies that includes wide area networks, the Internet and mobile computing have transformed its relationship with citizens, businesses and government, and resulted in the improvement of delivery of services, proficient interactions with business and citizens and efficient operations and management. As a result, the government as a service provider, has streamlined its service delivery for greater speed, certainty and transparency that made effect to putting public services online or into E-Services by which a citizen does not have to go to any government building to obtain public services. It is inevitable that all citizens have to interact with the government; but with a growingly large and diverse constituency with varying needs, all governments in the world have difficulty in effectively delivering public services that are increasingly costly and susceptible to red tape and corruption. The introduction of E-Services made the public services of governments accessible by all citizens through different services channels.

2.2.3. A Customised Plan of E-Government

Though E-Commerce and E-Government may commonly have ICT and the Internet as enablers or drivers of the improvement of their operations and delivery of services, both however, hold vastly different objectives. E-Commerce makes commercial use of the Internet and the ICT to sell and purchase goods and services, while E-Government focuses on delivering public services without expecting a profit.

Hence, government cannot take a private company's E-Commerce plan and implement it because there are simply too many differences between government and business. Any electronic strategy is distinctive and doesn't come wrapped in boxes. Governments must establish their own visions, and consider all the ways to deliver quality, cost-effective public services in ways that citizens and businesses want to receive them. Governments

¹⁵⁵ Wolfe, Laurence. "Transforming Accountability for Government IT Projects". ed, Heeks, Richard. *Reinventing Government in the Information Age: International Practice in IT-enabled Public Sector Reform*. (New York: Routledge, 2002) 231-243.

will have to develop customised or tailor-made E-Government plans or a home-grown E-Government with a set of features that suits the country and addresses the idiosyncratic needs of its stakeholders. This E-Government plan must strategically detail how the Internet will be used to integrate service delivery across agencies, shift the mindset and culture within the civil service and apply the “faster, better, cheaper” values of E-Commerce to public services. The Technology Acceptance Model is set to play a significant role in the implementation of an E-Government plan.

The first step in the customisation of the E-Government plan for governments is to start with its own backyards. This is one of the important dimensions of E-Government known as G2G or government to government, or A to A or administration to administration, for after all, an effective transformation of the government should start from within. This first step also presupposes interconnectivity of different departments and allows the sharing of resources and information. Government employees may not only interact with their departmental supervisors or the person in the next cubicle, but more importantly, they can use the Web to communicate, share knowledge and work with other employees in their department, other departments, other levels of government and other governments. The next step in tailoring E-Government is the G2B or government to business or A to B or administration to business. The Internet and ICT can help government generally improve the way it deals with the business community, capably conduct its own business with suppliers and collaborate with private-sector partners to deliver public services. Finally, the last dimension is G2C or government to citizen or A to C or administration to citizen where all public transactions are done over the Internet. The journeys from A to A, B, and C are already being embarked on by governments around the world. Perhaps not moving quite as fast or as effectively as foreseen, the determined governments are nonetheless working hard to make organisational changes with the establishment of portals/websites, and maximum utilisation of Internet and ICTs. They are acquiring new technologies and integrating old ones, forging new kinds of alliances and partnerships, sharing knowledge and working as teams to realise the gargantuan benefits of E-Government implementation.

In Dubai, government, businesses and individuals constitute the key entities in Dubai's economy. The productive interactions among these entities, namely: Government-to-Business, Business-to-Business, Government-to-Citizen play a fundamental and important economic role and results in the growth of values towards the government itself, businesses and citizens. The customisation of E-Government plan of Dubai should take

into consideration the best practices around the globe and moulding them to adapt and suit to its own unique characteristics. In some countries, modernisation usually starts at the national level but this is not always the case. The State of Victoria in Australia and the province of New Brunswick in Canada were two of the very first jurisdictions to get the E-Government ball rolling in their respective countries. Moreover, the remote north Canadian city of Yellowknife, with a population of only approximately 17,000, has a “smart community” initiative involving dozens of public, private and non-governmental organisations and voluntary agencies. Furthermore, the similarly sized Parthenay, in rural France, could teach Paris a thing or two about online public services.¹⁵⁶ These examples represent an island of best practice. When you put them all together, as this research sets out to do, you get a fairly good picture of how a government of the future might look and then assess the outcome of this study and conduct a thorough analysis of the case of Dubai in its initiatives towards the transformation to E-Government.

Five principles have emerged in the scrutiny of E-Government strategies that have been implemented successfully or targeted to be accomplished. First, governments should put everything from information to services online and do every transaction online. All forms and documents should be published in digital formats, and printed on paper only if necessary. Information should be stored on an intranet or data warehouse, not in filing cabinets, easy to create and maintain, and be easily analysed, searched, updated and shared. Rather than entering the same data many times, information is inputted just once. Governments should establish a timetable and set target dates for putting services online and justify, any business areas that cannot go online for operational or policy reasons. Second, governments should ensure easy universal access to online information and services. Government has a moral obligation to ensure that all citizens have equal access to public services, and that includes online services, regardless of their locations, income, ethnicity, age, or education. In this way, one of the primary concerns for online access, that is digital divide, is at least minimised if not resolved. In the information society, internet access is not a luxury, it's a necessity. Online public services should be accessible through a single contact point that is self-explanatory and easy to use. These services should be clustered into common themes rather than displayed by government offices and should use everyday and common terms rather than government jargon.

¹⁵⁶ The Smart Community
<http://www.smartcommunities.org/concept.php> 26.10.2008.

Third, government employees should be transformed into knowledge workers. They should have fingertip access to the accurate and up-to-date information they require to deliver quality public services. Web-based technologies should facilitate the transformation and culture change by creating a workplace where data are organised across departmental boundaries, making it easy for employees to access information intuitively, share it and work as a team.

Fourth, government should work in partnership with the business and private sector. Though governments do not have the same ends as businesses, they can learn from business and adopt effective techniques that may be suitable to the delivery of public services. The private sector should be encouraged to play a greater role in the delivery of public-sector services, and should be also involved in the governing process. There should be better cooperation between central and local governments. By adopting best-value policy and keeping an open mind about which kind of supplier, public, private, or partnership, can deliver the best service. Different organisations should bring together their respective skills and knowledge and, in the process, learn from one another.

Fifth and lastly, government should remove barriers and lead by example. In the information society, government should proactively encourage business and consumer confidence by helping key sectors to go online. It should set in place the legal frameworks needed to underpin the new economy, but avoid imposing unnecessarily the regulations and burdens that can stifle innovation. It should invest in people, particularly in their education, health, mobility, culture and quality of life to ensure that the new economy does not compound existing social problems of unemployment, social exclusion and poverty. Finally, to lead by example means conducting its own business online, including E-Procurements and the acceptance of online filing and payments.

2.3.4. The Government Online and the Changes towards E-Government

Getting a government online is a natural and important step in the development of itself and its relationship with the public and business sector. Online governments aim at improving quality of its services and increasing the value of its responsiveness towards its stakeholders through transparent, cost-effective delivery of public services. There is an increasing demand and expectation from government's stakeholders to have information

and services accessible online. This is hardly surprising as the population of Internet users is growing exponentially.

For many areas of government, the online environment will enable better programme outcomes. This will contribute more broadly to service quality beyond just the impact on individual agencies and their service charters. It has the potential of breaking down traditional barriers faced by clients, older communities and the disabled. It can address the inequities in accessing government information and services and remove the barrier of distance or mobility. Online public service can complement and enhance existing traditional service channels and provide round-the-clock access to government from almost anywhere.

Table 2 shows the fundamental changes from traditional governments to E-Government model while **Table 3** details the reinvention of local governments and E-Government initiatives. An analysis of these tables reveals that in the modes of services, the traditional way is to service citizens but on E-Government, it is self-service in many operations. The goal in traditional governments is to have citizens in line, while in E-Government is to have citizens online. In orientation of service, the traditional government aims for production cost and efficiency while E-Government aims for user satisfaction and control and flexibility. The leadership style of traditional government is by rule and mandate/ command and control while E-Government is flexible management, interdepartmental teamwork, facilitation and coordination. The organisation structure of traditional governments is top down, hierarchical while E-Government is innovative entrepreneurship, multidirectional network with central coordination and direct communication. The communication in traditional government is centralised, formal limited channels, but in E-Government, it is formal and informal, direct and fast feedback, and in multiple channels.

Table 2
Fundamental Changes from Traditional Government to E- Government Model¹⁵⁷

Factors	Traditional Governments	E-Government
Mode of Services	Service for Citizens	Self-service in many operations
Goal	Citizens in line	Citizens on- line
Expectation	Digital exclusion	Digital participation
Change	Paper intensive	Government on line
Management Style	Transaction intensive	Knowledge management
Orientation	Production cost, efficiency	User satisfaction and control, flexibility
Leadership Style	By rule and mandate/ command and control	Flexible management, interdepartmental teamwork, facilitation , and coordination
Organisational Structure	Top down, hierarchical	Innovative entrepreneurship, multidirectional network with central coordination, direct communication
Communication	Centralised, formal limited channels	Formal and informal, direct and fast feedback, multiple channels
Interaction	Documentary mode and interpersonal interaction	Electronic exchange, non face to face interaction
Process Organisation	Functional rationality, vertical hierarchy of control	Horizontal hierarchy, network organisation, information sharing

¹⁵⁷ Abdulla Al-Shehry, et al, op.cit, 7.

Table 3
Reinventing Local Governments and E-Government initiative¹⁵⁸

	Bureaucratic paradigm	eGovernment paradigm
Orientation	Production cost efficiency	User satisfaction and control flexibility
Process organisation	Functional rationality, departmentalisation, vertical hierarchy and control	Horizontal hierarchy, network organisation, information sharing
Management principle	Management by rule and mandate	Flexible management, interdepartmental teamwork with central coordination
Leadership style	Command and control	Facilitation and coordination, innovative entrepreneurship
Internal communication	Top down, hierarchical	Multidirectional network with central coordination, direct communication
External communication	Centralised, formal, limited channels	Formal and informal, direct and fast feedback, multiple channels
Mode of service delivery	Documentary mode and interpersonal interaction	Electronic exchange, non face to face interaction
Principles of service delivery	Standardisation, impartiality, equity	User customisation, personalisation

¹⁵⁸ Ndou, V. "eGovernment for Developing Countries: Opportunities and Challenges".
The Electronic Journal on Information Systems in Developing Countries. EJISDC 18(1), 2004, 1-24

2.2.5. E-Readiness

Electronic Readiness or E-Readiness is defined as the ability to use ICT to develop one's economy and to foster one's welfare.¹⁵⁹ The Economist Intelligence Unit (EIU), among the most prominent centres for research and world studies in economics, similarly, defined it as the measure of a country's ability to leverage digital channels for communication, commerce and government, in order to boost further economic and social development. Implied in this definition is the extent to which the usage of communications devices and Internet services creates efficiencies for business and citizens, the extent to which this usage is leveraged in the development of ICT industries.¹⁶⁰ Yearly, EIU releases a report which is a collective reflection of the economic, social, administrative and technical achievements by every institution of the country. The EIU has released its *2008 E-Readiness Report* in which the UAE has been ranked first among the Arab countries and 35th globally. However, in 2007, UAE is 33rd and in 2006, 30th which gives both a challenge and an impression that efforts for E-Readiness in the country is dwindling. **Table 4** further gives details on the E-Readiness ranking of UAE in 2008 compared to 2007.

Table 4
EUI E-Readiness Ranking of UAE in 2008 against 2007¹⁶¹

Category	2008	2007	Change
Connectivity and Technology Infrastructure	5.20	5.20	0
Business Environment	7.64	7.54	+1
Social and Cultural Environment	5.93	6.00	-0.07
Legal Environment	5.50	5.55	-0.05
Government Policy and Vision	6.45	6.45	0
Consumer and Business Adoption	6.09	6.22	-0.13
Overall Connectivity	6.09	6.22	-0.13

¹⁵⁹ E-Readiness - Windows Live
<http://sevencastles.spaces.live.com/blog/cns!7C5A2F3DB6C97D9A!13303.entry> 25.09.2008.

¹⁶⁰ E-Readiness
http://e4all.dubai.ae/content/view/520/lang,en_US/ 25.09.2008.

¹⁶¹ Ibid.

The ways a country achieves and sustains E-Readiness are varied and interrelated, and are shaped by factors in the economic, political and social environment, as well as the breadth of its ICT infrastructure and the digital services that are taken up. A micro-level more detailed benchmarking is suggested to compute sub-measures for networking, applications, Web-accessibility and readiness (NAWAR). This is constructed primarily to increase how ICT is actually put to work for development. **Table 5** shows the scoring criteria categories and weights used by EIU in its 2008 E-Readiness rankings, and these include connectivity and technology infrastructure, business environment, social and cultural environment, legal environment, government policy and vision and consumer and business adoption.

Table 5
Scoring Criteria categories and weights for EIU 2008 E-Readiness Rankings

Connectivity and technology infrastructure	20%
Business environment	15%
Social and cultural environment	15%
Legal environment	10%
Government policy and vision	15%
Consumer and business adoption	25%

Using these categories and weights, EIU assessed that collectively the world is moving up the E-Readiness charts with a score of 6.39 in the 2008 rankings, rising from 6.24 the previous year. This rise in world E-Readiness did not, however, translate into the elevation of a number of countries which are conspicuously among the top ten in previous years. After four consecutive years as the world's most E-Ready country, Denmark has dropped four places, as has Switzerland, to fifth place. The United States is now the global leader in E-Readiness, followed closely by Hong Kong which has moved on two places. Finland has receded three places from 10th to 13th, and has been replaced in the top ten by Austria. The decline of these countries is attributed to their failure to sustain the development they previously established on consumer and business adoption and government policy and vision. By contrast, those countries that have advanced have largely done so on improvements in the expansion of connectivity, including broadband accounts and WiFi hotspots and also in security of Internet connections. Policymakers have to use many

levers simultaneously to create an environment where digital connections can proliferate, and where citizens and businesses find it convenient, efficient and profitable to use digital channels for their transactions. This last part is the most difficult, for, while it is relatively straightforward to build digital channels, it is more complex to get people to use them. Even when a user base is recruited, the mercurial nature of the Internet means that even a slight change can have a negative impact.

Citing www.eiu.com, EIU lays down five guiding principles that policymakers can use to assess the opportunities to introduce consumers and businesses to good digital practices. First, the market should be allowed to build it. It has long been agreed that competitive telecommunications and Internet service markets are more efficient than governments in building networks and finding affordable price points for consumers. Governments must resist the urge to try to steer its ICT industry into technology-specific directions as happened to China when it delimited its mobile operators to adopt a domestic third-generation or 3G standard. Second, governments should only step in when needed. Governments must at the same time ensure that their ICT investment bridges digital divide as when rural and poor communities tend to be left behind if operators follow a purely market-driven course. This may mean that universal service obligations need to be enforced longer, or governments themselves may need to step in to fund development. By 2008, one-half of the world's population will have a mobile phone. This would indicate that carriers will certainly have to be more creative and cheaper if they wish to extend their business to the other half, and governments will also have to ensure that policies and regulations become incentives to carriers¹⁶². One should realise that policymakers should allow market forces to determine the course of the digital economy. Part of a government's mandate should be to ensure fair access to the resources that network operators need.

Thirdly, Governments should set an example. Government investment in digital processes that help to improve their own operations serves important functions when encouraging ICT use in the broader economy. Particularly in poorer countries, governments should strive to be an early adopter of digital practices that other organisations and individuals can emulate. Moreover, they should create demand for technology and digitally enabled services, both through their own direct purchases and through the creation of additional channels for procurement, and other operations as businesses are often compelled to invest in technology in order to access such channels. Fourthly, Governments should promote

¹⁶² Economist Intelligence Unit Business Intelligence
<http://www.eiu.com/index.asp?rf=0> 12.05.2009

ICT and Internet. They must champion digital development, fund their own ICT infrastructure, regulate and encourage others to adapt ICT and Internet development. Moreover, governments must simultaneously be as unobtrusive as possible if digital business is truly to thrive. They should remain staunchly technology-neutral and avoid promoting or specifying standards, makes or models of hardware and software, in either their procurement or licensing practices. Fifth and last, government should work continuously to improve the grade in E-Readiness¹⁶³. One should note that the EIU E-Readiness rankings show that it is timidly easy to fall back on more strategic digital objectives, and thus lose some of the ground gained in building networks and communities. The world of E-Readiness is a place with ever-shifting targets, where policy and practices must be reviewed and refreshed frequently in order to meet the aspirations of the communities that governments serve.

Furthermore, EIU also maintains that the physical communications infrastructure and the extent to which access infrastructure reaches a majority of people is the foundation for a country's E-Readiness.¹⁶⁴ It should be inferred that the economic value that communications connectivity brings to business and individuals is substantial, as it is also an advantage to society in terms of welfare, safety and community building. Telecommunications and data networks are thus no longer an infrastructure component for which governments have to justify spending. This does not mean that governments have no role in ensuring that its citizens are connected to the Internet. The fact, however, that the world is a much more connected place is challenging previous conventional wisdom about what sufficient levels of connectivity should be. This landscape has evolved as EIU earlier removed fixed line penetration as an E-Readiness metric and replace it with broadband penetration and increased the weight of density in rankings. Governments must push and promote, but if communication costs are not reasonable, there is little that policy can do to increase connectivity. In a recent research paper, the *World Dialogue on Regulation for Network Economics*, an international telecoms advocacy body, determined that the affordability point of an access technology is 2.5% of average household expenditure. This is the point at which 80% of the population owns a mobile phone with basic local services. The number of countries in the E-Readiness rankings in which the monthly cost of basic digital subscriber line (DSL) access is 2.5% or less of household income rose in the past

¹⁶³ Ibid.

¹⁶⁴ Ibid.

year from 39 to 44¹⁶⁵. Applying this measure to the price of broadband access, a global trend towards greater affordability is encouragingly apparent.

An integral contributor to a country's E-Readiness is its overall readiness to promote and facilitate business. The scoring model used by EIU indicates several categories of criteria that include political stability, macroeconomic health and the country's overall policy towards free enterprise. Also, this scoring model assesses a country's ability to maintain a stable, secure and unfettered place to conduct commerce in the manner in which it attracts and fosters digital commerce. Digital business may be slightly more attuned to a country's business conditions, because its responsive nature allows it to identify and exploit opportunities quickly. E-business is relatively light in terms of capital investment, and fast to penetrate markets. Even the more labour-intensive business that support digital commerce, such as call centres or knowledge management outsourcing providers, move quickly into markets where there are clear cost and skills advantages. Just as quickly, however, these industries can shift to other markets if there are rapid and threatening changes in the labour-cost, tax, financing or political environments. Therefore, stable business environments also assist in retaining digital commerce. As in many other globalised economies, software production and call centres are highly transient industries that can readily migrate to a more favourable operational climate, and so quickly. IT-enabled services are by nature value-added and efficiency-enhancing, but they are also cost-sensitive.

Furthermore, a country's legal environment provides the basis for free and fair commerce. EIU maintains that what is good for the offline world is also good for the online world. The digital industry, however, needs additional legal fortification in order to support most firms' ability to transact business online with valid, legally binding electronic documentation. Just as important for policy makers and legislators is to know when additional legislation is not needed for digital business. Moreover, in order for citizens to be online, countries need them to be Internet-literate. Or rather, technology needs to accommodate their literacy levels in order to get them online. The EIU contends that there must be an appropriate level of education and Internet familiarity for digital commerce to be viable. The digital savvy of citizens and businesses is a key foundation for an economy to capitalise its investments in new technology ventures.

¹⁶⁵ Ibid.

2.3.8. Adoption of E-Government

Spencer, in his work *Innovation: The Communication of Change in Ideas, Practices and Products*, suggested an adoption process model that goes through four sequential steps as illustrated in **Figure 8- The Adoption Process**. His paradigm indicates that individuals in adopting an innovation, whether it is an idea, practice or product, go through awareness, interest, evaluation and trial. If they are satisfied, they proceed to adopt it, if not, they reject it and evaluate another¹⁶⁶. Similarly in the adoption of E-Government, it can be deduced that citizens/customers or businesses may embrace the initiatives of E-Government in their own countries or states following the steps or process laid down by Spencer, hence, government should take these into consideration in the implementation of their initiatives towards E-Transformation.

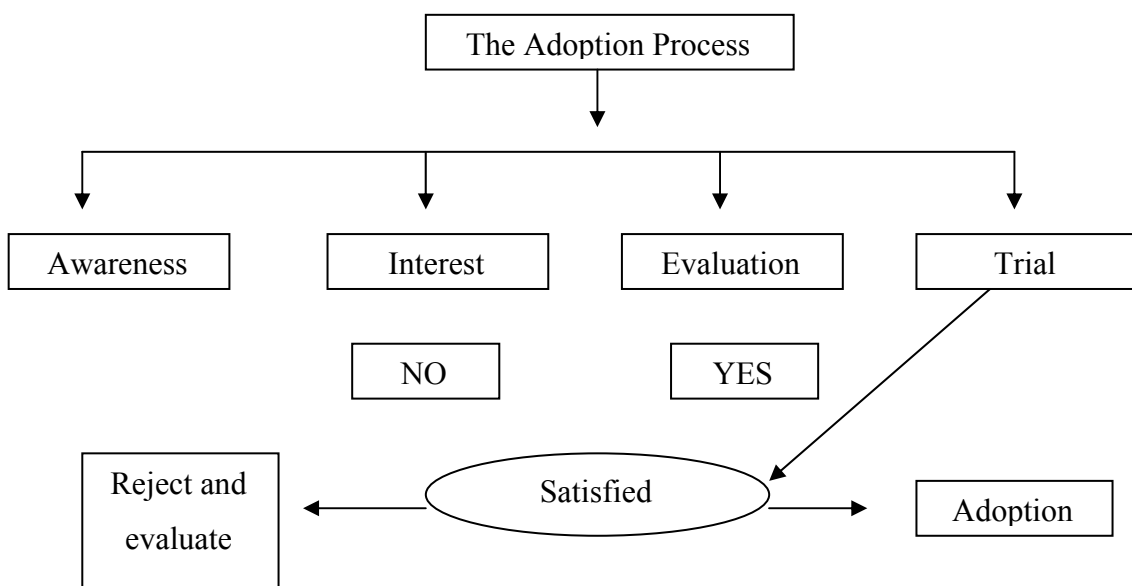


Figure 8 . The Adoption Process¹⁶⁷

Dawes, in his work *Future of Government*, also puts forward five fundamental needs for E-Government initiatives to prosper and these include: first, a comprehensive and coherent strategy for E-Government; second, a transformation from tradition of

¹⁶⁶ Spencer, W. *Innovation: The Communication of Change in Ideas, Practices and Products*. (London: Champ and Hall, 2004) 7.

¹⁶⁷ Ibid.

programme-driven services to E-Government's promise of integrated services; third, a way to offer services that resolves the issues associated with privacy and data sharing; fourth, a shift from yesterday's static Web to the new dynamic interactive Web; and fifth, to establish new models for public-private partnerships and other networked organisational forms.¹⁶⁸

Governments should prepare a comprehensive and unique plan and strategy for E-Government. It must take into account that information, services, transactions are the outputs of E-Government and that citizens, businesses and government agencies are its customers. ICTs and the Internet are its delivery mechanism and laws, rules and processes are its nervous system. A comprehensive and coherent strategy for E-Government unifies public sector departments as a single enterprise. It emphasises the principles, standards, and infrastructure are for all agencies to work in consistent ways. These may include legal and policy infrastructure, telecommunications infrastructure, standards for data technologies, rules and mechanisms for information use and sharing and a host of other elements. A strategy has to account for reaching all the people who need government services regardless of their age, income, language, or access to the Internet. It also needs to assure that all agencies and all their private and non-profit business partners are capable of engaging fully in using or delivering E-Government applications with assurance of privacy and security in data sharing. In the state of Washington, a state digital government treats the state, with all of its various components, as a single enterprise, and follows a "build it once strategy" to avoid duplication, honour common standards and build a common infrastructure to serve citizens;¹⁶⁹ this example illustrates further that a government may reap more benefits if it can make its E-Government initiatives coherent and goal-oriented.

E-Government adoption builds a transformation from the government's tradition of programme-driven services to E-Government's main undertaking of integrated services. However, like any new technology project, electronic government is difficult, but it's made even more difficult because it places so much pressure on the entire enterprise. The vision of E-Government is an image of integrated information and services and this means radical changes are needed in what happens behind the website that citizens see. New business processes, different information flows, changed policies, new kinds of records, advanced security measures and new data management methods are all part of the

¹⁶⁸ Dawes, *op.cit.*

¹⁶⁹ *Ibid.*

integration processes. This deeply transformational work signifies why leadership is so critical. A report from the Kennedy School of Government at Harvard University states that “to be an effective leader in our networked world, you need to engage in IT issues. You need to play a key role in establishing strategic direction, implementing specific projects, and formulating new public policies.”¹⁷⁰

Moreover, governments in their implementation of E-Government services should resolve the issues associated with privacy and data sharing. Sharing data from multiple sources is a challenge that has become more fundamental as portal technology advances. Data integration requires new business processes, increases technical complexity, demands reliable security and presents data privacy, quality and ownership issues. These issues are of deep concern to citizens as to their security and privacy. They also want E-Government to help them become better informed and more involved in making processes and decisions that are more open and transparent.

E-Government adoption also provides a shift from yesterday’s static website to the new dynamic interactive World Wide Web. The future of an agency’s work now rests in new and evolving technologies that support real-time, dynamic interactions. The Web began in government as an exciting way to present static content to virtually anyone which before required new presentation skills and technologies that are now ordinary. In that early stage, an agency’s content was posted on the Web, but many applications will move to a dynamic state. In this new application, information is readily available to users who interact with agency databases to produce new services. These applications demand dynamic technologies involving data access, database management, authentication and security of a very different nature from the old Web. The dynamic Web makes closer connections between an agency’s internal systems and the outside world, presenting new risks and demanding new tools and techniques for managing them.

Furthermore, E-Government adoption also provides new models for public-private partnerships and other networked organisational forms. Given the diversity of players involved in delivering government services, effective E-Government often requires coalitions of partners both within government and between government and the private and the private and non-profit sectors. Competition between government and private companies for new graduates with new skills and for seasoned professionals with deep

¹⁷⁰ Ibid.

experiences will continue to be a challenge. The resulting organisational, legal and technological relationships are complex and difficult to manage, yet they offer a way to deal with the chronic shortage of IT professionals interested in government careers.

Of relevance here is the research of Attalah, *E-Government Considerations for Arab States*, where he contends that states and governments can promote E-Government in three steps: first, E-vision; second, authority and participation; third, to start small and keep it simple. In the E-Vision, this vision should encompass current and changing needs of the country related to human development and better governance. In authority and participation, governments should entrust a capable team responsible for the implementation of E-Government initiatives with the political influences and the necessary funding to undertake the required steps and set up a participatory process in which all major stakeholders are involved in the implementation of E-Government initiatives. Lastly, to start small and keep it simple, directs governments to start with small and uncomplicated projects that achieve what they set out to do, before moving on to bigger things such as all-embracing portals that cover every aspect of government activity¹⁷¹. It should be noted that 85% of all public sector IT projects are deemed to be failures because government often manages projects poorly and is inflexible; this can be avoided with involvement of other stakeholders¹⁷². One can infer from Attalah's steps of promotion of E-Government that the best way to start may be to establish a fairly simple portal and then add functions in stages that follow the developmental stages of E-Government, namely posting information, two-way transactions, transactional service and the integration of services in a single portal. The government must have a clear strategy to overcome barriers to change and to rigorously assess the current situation and the inventory of projects. Furthermore, the government's E-vision must be a component of a larger national IT framework for the economy and society at large and to lay down the infrastructure for the private sector to develop an IT sector as well as invest and adopt IT-related technologies in its production, operation and distribution. The involvement and participation of all stakeholders will reduce resistance to reforms by actively marketing their plans, explaining why serious change is required and what benefits it will bring as well as integrate their inputs into the initiative.

¹⁷¹ Attalah, op.cit.

¹⁷² Ibid.

2.3.7. The Models of E- Government

Kim in his book, *Converging E-Democracy and E-Government Model toward an Evolutionary Model of E-Governance: The Case of South Korea*, supplies important insights on the models of E-Government. His model provides the relationship of a government to itself, government to its citizens, government to business. Kim, however, used the following taxonomies to illustrate the relationships, namely: Administration to Citizens, Administration to Business, Administration to Administration. These three components of citizens, business and government comprise the main bodies of society which are in circular processes of connections and associations.

Figure 9 shows the model of relationship among citizen, business and government. The relationship of an administration to its citizens has constantly changed as long as society is continuously developing. The public services provided by the government have varied and made better on the request from its citizens, hence, modifying the role and scope of governments. On these trends, the government starts to provide client-oriented services to the public with various choices and customised services. This is also because of higher education and advanced mass media, the capacity of citizens has been improved and developed and advanced citizens to participate more in public affairs as they acquire more access to diverse methods to express their opinions to the government. In administration to business, the relationship of government and business has also changed. Before, governments have been regulating and intervening and their focus was on ruling rather than serving market and business companies and industries. Now the role of government is to provide better and cost-effective public services where companies do their business transactions harmoniously and comfortably. In administration to administration, intergovernmental work and policy coordination is emphasised and sharing information among intergovernmental ministry and agencies are very important keys to coordinate policy and projects. This leads to reduction of transaction cost and increased efficiency of administrative processes, which evidently would contribute to high productivity of administration and better decision-making.

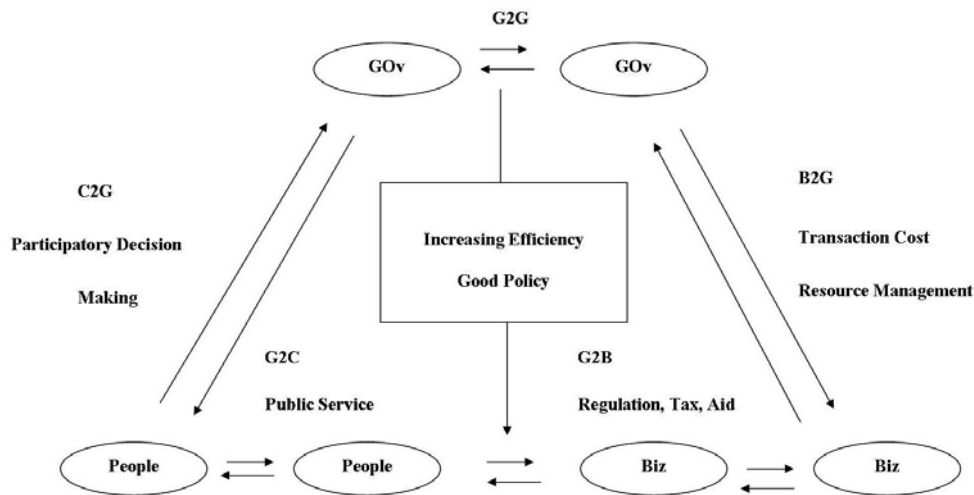


Figure 9. Model of Relationship among Citizen, Business and Government¹⁷³

Kim classified the models of E-Government into four areas, namely: Bureaucracy Model E-Government, Information Model E-Government, Citizen Participation Model E-Government and Governance Model E-Government and indicates that social diversity and maturity of civil society as significant factors in the evolution of E-Government. **Figure 10** captures the evolutionary dimensions of the model of E-Government where social diversity and civil society represents the development of society. In the Bureaucracy Model E-Government, the main policy is focusing on efficient administrative functions with respect to internal government structure and individual public officers. This model occurs in an environment where civil society has not matured, and as a result, the degree of a citizen's participation in government decision-making process is very low. In the Information Management Model E-Government, this model states that there would be a linkage between citizens and government in terms of electronic public service, however, there is still no significant input to the government decision-making process.

¹⁷³ Kim, S. *Converging E-Democracy and E-Government Model Toward an Evolutionary Model of E-Governance: The Case of South Korea*. (Seoul: Asia- Pacific Development Information Programme, 2006) 2-7.

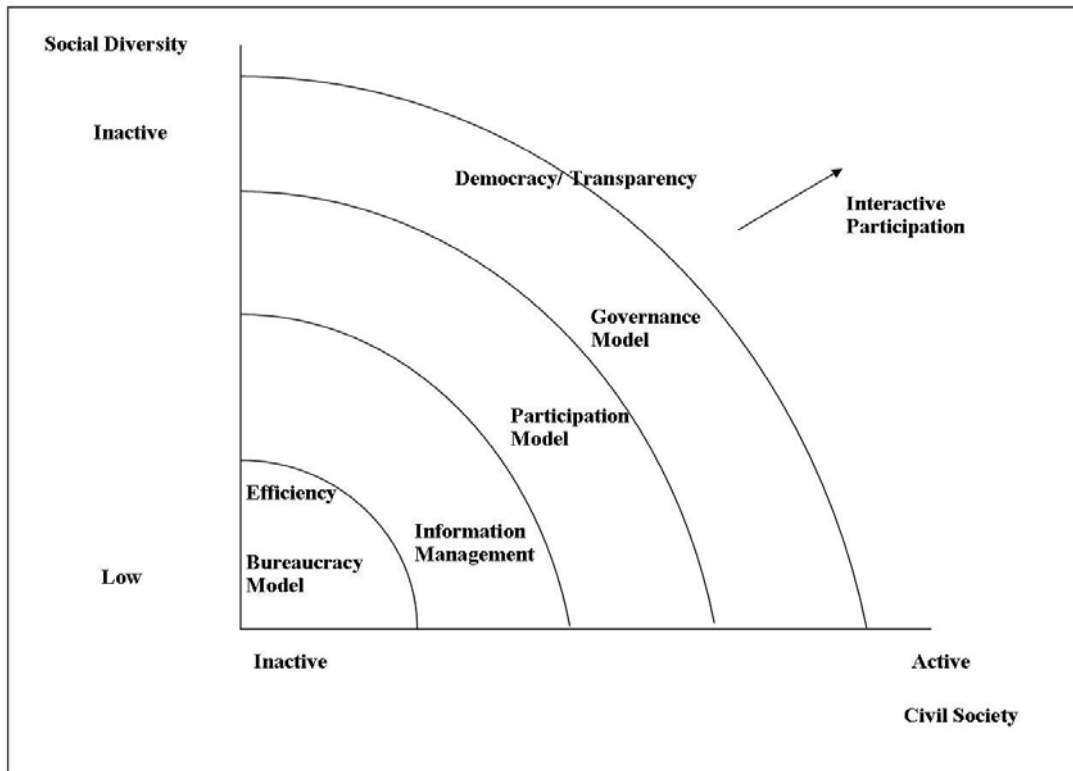


Figure 10. Models of E-Government¹⁷⁴

In Citizen Participation Model E-Government, the model holds that there are positive and strong citizen's participations to the government decision-making process through two-way interactions. It starts to put little emphasis on democracy and transparency by using information technology. Moreover, there are many services available through the Internet or information technology applications. In this model, the degree of civil society has matured. Finally, the Governance Model E-Government states that various civil groups and citizens actively participate in all government decisions making process and express their opinions through the Internet. Naturally, there are strong democratic and transparent processes that have been emphasised and there are multiple transactions through the networking between social entities; as a result, civil society has strongly matured.

¹⁷⁴ Ibid, p. 8-15.

2.3.8. The Stages of E-Government

The movement towards E-Government has four distinct stages, namely: posting information, two way communications, exchange of value and integrated service and exchange¹⁷⁵. **Table 6** illustrates the corresponding actions that will advance E-Government through the various stages. Stage 1 requires governments to post general information and online-forms that can be printed in their website or portal. In this stage, governments must enhance the telecommunication and infrastructure and increase the number of fixed and mobile phones. This could be facilitated by the liberalisation of the telecommunication sector. Moreover, governments should reduce the cost of telecommunications. Encourage or subsidise the costs of PCs with the cooperation of the private sector and increase the competition in the Internet service provision and/ or lower rate for Internet connections. Governments must also invest in advance access infrastructure like cable and other broadband systems, wireless, fibre optics and satellites, and ensure universal access in public institutions – libraries, centres, public telephone offices and post offices and/ or encourage the private sector to do so.

In stage 2, two-way communications flourish which means that websites allow informational queries and forms to be completed online. Governments should strive to make the data available as a public asset and integrate all the data that may be needed by citizens or businesses in dealing with the government, particularly in availing its electronic services. Stage 3 promotes already an exchange of value as government agencies interact directly with clients online, including recording and storing sensitive information. Government portals now challenge working practices and processes and encourage the development of online confidence and security in online transactions. The fourth and final stage is the integration of services and exchange. Government website portals have now unified all services of different departments and also allow exchanges of value. The national government centralises the offering of E-services and constituents have ready an easy access to different government services in a single portal.

¹⁷⁵ Allatah, op.cit.

Table 6
Stages of E-Government and Required Actions

Stages	Action to Advance E-Government
<p data-bbox="228 371 815 416">Stage 1. Posting the Information</p> <p data-bbox="228 483 815 629">Websites post general information and online forms that can be printed – a one way communication system</p>	<ol style="list-style-type: none"> <li data-bbox="815 371 1402 629">1. Enhance the telecommunication and infrastructure and increase the number of fixed and mobile phones. Could be facilitated by the liberalisation of the telecommunication sector. <li data-bbox="815 696 1402 741">2. Reduce the cost of telecommunications. <li data-bbox="815 808 1402 909">3. Encourage or subsidise the costs of PCs with the cooperation of the private sector <li data-bbox="815 976 1402 1122">4. Increase the competition in the Internet service provision and/ or lower rate for internet connections. <li data-bbox="815 1189 1402 1346">5. Invest in advance access infrastructure like cable and other broadband systems, wireless, fibre optics, and satellites <li data-bbox="815 1469 1402 1682">6. Ensure universal access in public institutions- libraries, centres, public telephone offices, and post offices and/ or encouraging the private sector to do so.
<p data-bbox="228 1749 815 1794">Stage 2. Two Way Communications</p> <p data-bbox="228 1861 815 2007">Websites allow informational queries and forms to be completed online, this is the two way communication system.</p>	<ol style="list-style-type: none"> <li data-bbox="815 1749 1402 1850">1. Make the data available as a public asset <li data-bbox="815 1917 1402 1962">2. Integrate the internet into the classroom <li data-bbox="815 2029 1402 2074">3. Fund training for educators on how best

	<p>to sue Intent technologies</p> <p>4. Provide technical training for workers in IT</p>
<p>Stage 3. Exchange of Value.</p> <p>Websites allow an exchange of value to take place as government agencies interact directly with clients online, including recording and storing sensitive information.</p>	<p>1. Reform the public sector since websites now challenge working practices and processes</p> <p>2. Encourage the banking sector to develop new financial products to ensure financial security</p>
<p>Stage 4. Integrated Service and Exchange</p>	<p>Unified all services of different departments of governments</p>

On the other hand, the United Nations, in their work *UN E-Government Survey 2008: From E-Government to Connected Governance*, identified five stages of E-Government evolution, namely: Emerging, Enhanced, Interactive, Transactional and Connected.¹⁷⁶ In Stage 1 – Emerging, the government’s online presence mainly consists of a Web page to which links to ministries or departments may or may not exist and much of the information is static. Stage 2 – Enhanced, on the other hand, has the government providing more information on public policy and governance and links are created for archived information that is easily accessible to citizens. When governments deliver online services such as downloadable forms and applications, this is stage 3 – Interactive. In Stage 4 – Transactional, the government introduces two-way interactions including options for paying and allowing citizens to access E-Services: all transactions are conducted online. The last, stage 5 – Connected portrays a government that responds to the needs of its citizens and is the most sophisticated level of online E-Government initiatives, characterised by horizontal connections among government agencies, vertical connections among central and local government agencies, infrastructure connections among

¹⁷⁶ UN E-Government Survey 2008: From E-Government to Connected Governance, op.cit, 15.

stakeholders. Moreover, E-Participation is supported and encouraged by governments in decision-making process.

2.4. Conclusion

This chapter – The Foundation and Adoption of E-Government – is divided into two parts. First is the Foundations of E-Government and the second is the Concept and Adoption of E-Government. This first part explores the early development of E-Government; it traces ICT and Internet evolution. The so-called advance precipitated new technology and social changes that brought together nations and people over a new medium to become networked communities. The explosive entry of technology into every facet of life has changed how people live, how they work, how companies do their work and how government serves its constituents. Inevitably, this evolution of ICT and Internet gave birth to technology and social changes which inevitably led to networked and virtual communities and organisations. A basic assumption on the analysis of this leads to the potentiality for E-Commerce and E-Government. This chapter also highlights the role of ICT and Internet evolution as driving forces for new business strategies and underlines the competitive advantage of IT. Furthermore, E-Commerce and its relations to E-Government are succinctly discussed as well as the knowledge and innovation capabilities that shaped knowledge-based economies.

The second part of this chapter presented the concept and adoption of E-Government which starts with the transformation of public services into an E-Government and E-Services concept. Incidentally, governments getting online are the expected and important step in its development and its relationship with the public and business sector. Tables are presented to describe the changes towards E-Government; the first is on fundamental changes from the traditional to an E-Government system while the second is on reinvention of local government as E-Government. One of the most important discussions in this chapter is on E-Readiness which refers to the measurement of a country's ability to leverage digital channels for communication, commerce and government in order to boost further economic and social development. The Economic Intelligence Unit (EIU) prescribed a scoring criterion used in their 2008 E-Readiness rankings and this includes: connectivity and technology infrastructure, business environment, social and cultural environment, legal environment, government policy and vision, and consumer and

business adoption. The report shows UAE as first among Arab countries but 35th globally. However in 2007, UAE is 33rd and in 2006, 30th.

Similarly reviewed are the models of E-Government reflected in three relationships of Administration to Citizens, Administration to Business and Administration to Administration. In the first relationship, the government starts to provide client-oriented services to the public with various services and customised services. In the second relationship, the role of government is to provide better public services to industry and companies. It can improve transactions harmoniously and comfortably with reduced transaction costs. In the last relationship, sharing information among intergovernmental ministries and agencies are very important keys to coordinate policy and project leading to a reduced cost in transactions and increased efficiency of administrative processes. Lastly, the four distinct stages of E-Government are also presented. The first stage requires governments to post general information and online forms that can be printed on a website or portal. Government must enhance telecommunications and infrastructure and increase the number of fixed and mobile phones. The second stage allows a two-way communication system. Websites allow information queries and forms to be completed online. Governments strive to make data available as a public asset. The third stage supports an exchange of value. Websites allow an exchange of value to take place as government agencies interact directly with clients online, including recording and storing sensitive information. The final stage is the integration of services and exchange. The website portal has now unified all services of different departments of government and also allows an exchange of value to happen as the national government centralises the offering of E-services.

CHAPTER III

E-GOVERNMENT AND THE WORLD

3.1. Introduction

This chapter gives a panoramic overview of the E-Government initiatives of states that have performed well in the E-Readiness rankings of 2008 conducted by the Economist Intelligence Unit (EIU). This is to identify and analyse the best practices and initiatives of states which will be the basis of the formulation of a particular eGovernment framework for the Emirate of Dubai. The categories used by EIU as criteria in measuring E-Readiness ranking include connectivity and technology infrastructure, business environment, social and cultural environment, legal environment, government policy and vision, consumer and business adoption. The states are selected to identify, study, and the best practices of those top-ranked in the adoption and implementation of E-Government, such as United States, Sweden, Australia, Hong Kong, Denmark, Singapore, Norway and Finland. However, to be able to further analyse a state particularly in the Arab Region for purpose of identifying similar best practices, the Kingdom of Bahrain is also considered. **Appendix no. 13** shows the world map and location of countries under study.

3.2. E-Government of the United States

The E-Government of United States was established through the E-Government Act of 2002, which has stepped up its efforts in expanding its E-Government initiatives. According to www.whitehouse.gov, this act essentially aimed first, to make it easy for citizens to obtain services and interact with the federal government; second, to improve government efficiency and effectiveness; third, to improve government's responsiveness to citizens.¹⁷⁷

To spearhead the preparation and implementation of E-Government, an interagency E-Government task force was initiated. This team, in its research and findings, discovered that the federal government could significantly improve customer service by focusing on 24 high-payoff, government-wide initiatives that integrate agency operations and IT investments. These initiatives could generate several billion dollars in savings by reducing

¹⁷⁷ The E-Government Act of 2002
<http://www.whitehouse.gov/omb/e-gov/> 08. 12.2008

operating inefficiencies, redundant spending and excessive paperwork. In their E-Government strategy citing www.whitehouse.gov, by leveraging IT spending across federal agencies, the initiatives make available over \$1 billion in savings from aligning redundant investments.¹⁷⁸ Furthermore, the initiatives provide swifter public service to citizens in minutes or hours, compared to today's standard of days or weeks.

According to www.cio.gov, the E-Government Task Force has discovered that significant federal government problems could be resolved by E-Government implementation. Their analysis found that redundant and overlapping agency activities had been major impediments to creating a citizen-centred electronic government. In a report, *Simplified Delivery of Services to Citizens*, of 28 lines of business found in the federal government, the assessment revealed that, on average, 19 executive departments and agencies are performing each line of business.¹⁷⁹ We conclude that because each agency has invested in both online and traditional approaches, regardless of other departments' redundant efforts, these translate into many duplicated reporting requirements, while requiring citizens to wade through thousands of websites and dozens of call centres to find a particular service. One can draw further that this government operation architecture is a tip-of-the-iceberg problem that creates redundant activities and processes, resulting in unnecessary burdens and costs on citizens, on state and local governments and on businesses and federal employees. In the pursuit of successful federal E-Government initiatives, the Task Force has identified key barriers that must be mitigated. These concerned the following: culture, architecture, trust, resources and stakeholder resistance. These key barriers are addressed in E-Authentication initiative and the Enterprise E-Government Architecture Project.

According to www.va.gov, the E-Authentication initiative is a federal-wide scheme that creates a single, uniform and government-wide approach to identity proofing in online transactions. This E-Authentication initiative enables mutual trust to support widespread use of electronic interactions between the public and government and across government by providing common solutions to establish the identity of a stakeholder¹⁸⁰. One can infer that this initiative becomes the solution to address authentication security, privacy and electronic signature needs of the E-Government initiatives. It also sets the standards for

¹⁷⁸ E-Government Strategy

<http://www.whitehouse.gov/omb/inforeg/egovstrategy.pdf> 13.11.2008.

¹⁷⁹ Simplified Delivery of Services to Citizens

<http://www.cio.gov/Documents/EgovStrategy.html> 14.12.2008.

¹⁸⁰ What is e-Authentication?

<http://www.va.gov/eauth/> 01.12.2008

identity verification of individuals and businesses and resolves the business needs of E-Government initiatives by building the necessary infrastructure, processes and systems for government-wide use. The E-Authentication's mission then is to enable trust, an inherent part of every online exchange between citizens and the government and this eventually becomes a service that makes it easier for citizens to get access to online government services. The E-Authentication services across government agencies by the United States enable access to any E-Authentication-enabled federal website application with a single ID and password set and, hence, one will not be required to remember different log-in information for each government website.

According to www.whitehouse.gov, the E-Government Architecture of US is a business-based framework for government-wide improvement to transform the federal government to one that is citizen-centred, results-oriented and market-bound.¹⁸¹ Hence, one can infer that the Enterprise E-Government Architecture is entirely business-driven to organise the government's line of business and its services and this approach provides a common framework of improvement in key areas of budget allocation and integration, information sharing, performance management, cross-agency collaboration and component-based architectures. In effect, this would simplify processes and unify the work across the agencies within the lines of business of the federal government and create a more-citizen-centred, customer-focused government that maximises technology investments to better achieve mission outcomes.

The E-Government Architecture of US was carried out into two major concurrent activities. According to www.whitehouse.gov, the first is the development of a Federal Enterprise Architecture for each of the current E-Government initiatives to standardised technology models. The second activity is the collection and analysis of business and data architecture information across the federal government to identify new opportunities for E-Government initiatives and elimination of redundancy.¹⁸² Upon scrutiny, this federal enterprise architecture has focused on four key areas that include homeland security, economic stimulus, social services and back office operations. Such strategy resulted in significant improvements in the federal government, including simplifying delivery of services to citizens, eliminating layers of government management, making it possible for

¹⁸¹ Federal Enterprise Architecture
<http://www.whitehouse.gov/omb/egov/a-1-fea.html> 02.12..2008.

¹⁸² Federal Enterprise Architecture
<http://www.whitehouse.gov/omb/e-gov/fea/> 18.06.09.

citizens, businesses, other levels of government and federal employees to easily find information and get service from the federal government, simplifying agencies' business processes and reducing costs through integrating and eliminating redundant systems and streamlining government operations to guarantee rapid response to citizen needs.

Furthermore, the E-Government initiatives of US have provided opportunities to transform the delivery of services to focused groups. These groups include Individuals/Citizens or Government-to-Citizens (G2C), Business or Government to Business (G2B), Intergovernmental or Government-to-Government (G2G) and Intergovernmental or Internal Efficiency and Effectiveness (IEE). According to *www.usa.gov*, in Government-to-Citizens (G2C), the focus is to build easy to find, easy to use, one-stop points of service that make it easy for citizens to access high-quality government services. In Government-to-Business (G2B), the focus is to reduce government's burden on businesses by eliminating redundant collection of data and better leveraging E-business technologies for communication. In Government-to-Government (G2G), the focus is to make it easier for states and localities to meet reporting requirements and participate as full partners with the federal government in citizen services, while enabling better performance measurement, especially for grants. The consequent effect is also that other levels of government see significant administrative savings and are able to improve programme delivery because more accurate data are available in a timely fashion. Lastly in Internal Efficiency and Effectiveness (IEE), the focus is to make better use of modern technology to reduce costs and improve quality of federal government agency administration, by using industry best practices in areas such as supply-chain management, financial management and knowledge management, agencies are able to improve effectiveness and efficiency, eliminating delays in processing and improving employee satisfaction and retention¹⁸³.

Darrel West, in his work, *State and Federal Electronic E-Governments for United States 2008*, identifies 18 key features that determine the E-Government index for each state website and provide the basis for accomplishments and improvements in E-Government initiatives in the US. This includes publications, databases, audio clips, video clips, foreign language access, not having ads, not having user fees, not having premium fees, W3C disability access, having privacy policies, security policies, allowing digital signatures on transactions, an option to pay via credit cards, e-mail contact information, areas to post

¹⁸³ E-Government Strategy in the United States
http://www.usa.gov/Topics/Includes/Reference/egov_strategy.pdf 14.09.09

comments, option for email updates, allowing for personalisation of the website and PDA or handheld device accessibility. Ninety-eight percent of sites provide access to publications while 88 percent have databases in 2008 and the numbers of websites incorporating audio or video clips are growing¹⁸⁴. One can gather that access to publications and databases is excellent in looking at the availability of basic information on American government websites.

One of the most promising aspects of E-Government in the US is its ability to bring citizens closer to their government through an email. Visitors to the website can e-mail a person in the particular department other than the webmaster. According to www.contacts.gsa.gov, in 2007, 88 percent of websites had email addresses. Other methods that government websites employ to facilitate democratic conversation include areas to post comments (other than through email), and the use of message boards, surveys and chat rooms. Each state website is linked to all state agencies and services. All states of US are directed to implement these linkages when creating a site so that the searching for information will be much easier for its users¹⁸⁵.

In the *E-Government Strategy* paper that aims for a simplified delivery of services to citizens, a number of specific actions for government websites are recommended. The list includes, first, websites should have strong privacy and security policies so users feel safe while online and that no site should be without a privacy policy. This was complimented by the introduction of privacy impact assessment mandatory (PIA) procedures that aim to help public organisations determine whether new technology, Information Systems and initiative or proposed programmes and policies meet basic privacy requirement¹⁸⁶; second, agencies should have layouts similar to the portal page so that users can automatically identify that agency's website as a government unit; third, websites should have pages that let users know that they are being redirected to another address outside of government; fourth, agencies should have navigational guides and site maps that briefly summarise the information users can find on each webpage; fifth, the "What's New?" section should be conveniently located on each agency's homepage; sixth, all websites should have search engines; seventh, agencies should frequently update their webpages;

¹⁸⁴ West, Darrel. State and Federal Electronic E-Governments for United States
http://www.brookings.edu/reports/2008/0826_egovernment_west.aspx 28.07.09.

¹⁸⁵ Implementing the President's Management Agenda for E-Government
http://contacts.gsa.gov/graphics/fts/President_E-Gov_Strategy.pdf 24.09.09

¹⁸⁶ Richard, Heeks, Implementing and Managing E-Government, (London: Sage Publication 2006) page 143

eight, agencies should strive to have personalised webpages, such as a kids' page; nine, websites should provide foreign language accessibility; ten, foreign language translation is essential for government agency websites and this improves the accessibility of the website to non-English speakers and people outside the United States.¹⁸⁷

3.3 E-Government in Sweden

According to www.europa.eu, the Swedish model for E-Government is to develop a 24-hour Public Administration which is at the same time a policy goal of the Swedish government. This concept denotes that public information and services should be available electronically 24 hours a day seven days a week. The concept of the 24/7 Agency – a 24-hour, seven-days-a-week online public service – was presented three years ago as a government initiative and a part of the national IT action plan. Today it is a high priority issue and keeps the country in front of the world's information society nations. The 24/7 Agency offers electronic services to citizens from national and local government agencies irrespective of time and geographical location. However, the notion of a 24-hour public administration of the government of Sweden encompasses much more than offering better services to citizens and enterprises by new electronic channels for information and service delivery¹⁸⁸. According to www.centredigital.gov, an important aim of E-Government of Sweden is also to strengthen democracy by enhancing transparency and citizen participation in the policy-making and decision-making processes¹⁸⁹. Different needs and conditions are taken into account so that no citizens are excluded from the new opportunities offered by E-Government. A multi-channel approach is also offered, so that citizens can choose between different service channels – Internet, face to face and telephone. Moreover, government websites/portals have a design and a language that facilitate access for everyone.

According to *EU: Interchange of Data between Administrations*, the E-Government of Sweden is a citizen-focused public administration that builds on a close co-operation between the different government authorities and levels of government.¹⁹⁰ To achieve this

¹⁸⁷ E-Government Strategy, op.cit.

¹⁸⁸ E-Government of Sweden
<http://europa.eu.int/idabc/servlets/Doc?id=21025> 10.09.2008.

¹⁸⁹ Centre for Digital Government
<http://www.centerdigitalgov.com/international/story.php?docid=47059> 24.11.2008.

¹⁹⁰ EU: Interchange of Data between Administrations
<http://europa.eu.int/ISPO/ida/jsps/index.jsp?fuseAction=showDocument&parent=whatsnew&documentID=962>
19.12.2008.

goal, all agencies are connected electronically and share the same infrastructure, standards, certificates and general rules and regulations. The corresponding service channels include internet services – Web, email, mobile client programme, telephone services – automated attendants, service telephones, call centres and television services – teletext, interactive digital television. According to www.egov.vic.gov.au, the processes of their E-Government are established in four stages: in stage 1, the website contains 'packaged' information about the agency and its services, in stage 2, it contains 'interactive' information about the agency and its services, in stage 3, website and communicative functions allow the visitor to submit and retrieve personal information, and in stage 4, website and network functions provide joined up services involving several agencies and institutions¹⁹¹.

Among the enablers of E-Government initiatives of Sweden is the high penetration of personal computers and the Internet. Internationally, Sweden is one of the leading countries in the use of personal computers and the Internet. According to www.europa.eu, more than two-thirds of the population between 18 and 64 years have a computer at home and more than 80 percent have access to the Internet from home, at work or at school. An important driving force has been the PC tax reform which was initiated in 1998 by the government of Sweden. Amendments were also made to the Swedish tax legislation, removing the tax charge on the benefit of the use of an employer's computer equipment for private purposes. This means that employees can borrow a computer for private purposes from their employers without having to pay tax on the benefit; and neither does the employer have to make social security contributions¹⁹². One can assume that the high penetration means good opportunities for a rapid development of E-Government in Sweden.

In the implementation of the 24-hour public administration, the strategy for delivery is based on the Swedish decentralised model for public administration. Sweden has small policy ministries and a large number of relatively autonomous agencies which are responsible for implementing government policies. The agencies are managed by a system of performance management, where the Government sets targets, allocates resources, appoints managers and follows up and evaluates the results. Public agencies have thus

¹⁹¹ Portals and Gateways - Australia
www.egov.vic.gov.au/index.php?env=-categories:m1608 09.07.2009.

¹⁹² E Government of Sweden, op. cit.

been given substantial freedom in deciding how to use their resources in order to produce the desired services and results. In line with this strategy, the Swedish government, when it comes to E-Government has limited its role to set the overriding goals, remove obstacles in the form of legal barriers and supports the agencies by providing guidelines and methods and ensuring that the necessary common infrastructure for E-Government comes into place.

According to www.ppa.sagepub.com, as an initial step, the Swedish government commissioned an Agency for Public Management to stimulate and support the development of the 24-hour public administration. This Agency will be working in close co-operation with all agencies concerned in the development of methods, guidelines and agreements as well as the implementation of projects of common interest. To ensure high security in the electronic communication, the Swedish government has also commissioned the National Tax Board to co-ordinate the administration of certificates for electronic identification and electronic signatures. Thus, a framework agreement has been reached with several banks and other institutions offering services for electronic signatures¹⁹³. One can infer that this strategy establishes an open solution in co-operation with the private market and offers citizens a single electronic identity for all kinds of E-services. Furthermore, to remove unnecessary obstacles for electronic communication, the government of Sweden has also decided on a review of all legislation prescribing written procedures with the aim of promoting the use of electronic documents and electronic signatures.

The Swedish government has correctly recognised that the main responsibility for the development of 24-hour public administration must rest on the agencies themselves as they have the best knowledge of their customers' needs. Hence, they encourage more co-ordinated efforts to establish the common rules, infrastructure and basic functions necessary for the joined-up services based on networked agencies which are the final goal for a citizens-focused administration. As cited in www.egov.vic.gov, the government of Sweden currently takes measures to step up the development of the 24-hour public administration in the years ahead. Some of these measures include setting more explicit targets for the agencies' E-service development to stimulate the development of E-services of great benefit for citizens and enterprises, but not cost-efficient for the separate agencies,

¹⁹³ The Governance of E-Government
<http://ppa.sagepub.com/cgi/content/abstract/22/3/335> 12.06.2009

to decide on a minimum of binding rules and standards necessary for a well-functioning electronic communication within the public administration and with its customers, to provide a supporting set of basic functions as a common infrastructure for the communication and co-operation between the different public agencies, to deepen the co-operation between state, regional and local government in the development of public E-services and to provide a common entrance and guide, based on life events and business situations to all electronic information and services offered by the different parts of public administration and service¹⁹⁴.

Another enabler in the E-Government initiatives of Sweden is its legal framework. Several important laws that support the E-Government initiatives were enacted, such as the Act on Qualified Electronic Signature in 2000 which implements the EU Directive on electronic signatures, the Act on Electronic Commerce and other Information Society services in 2002 which lay down the obligations of service providers to their customers and the treatment of information submitted online. Moreover, in 2006, the Act on Public Procurement is also adopted which regulates some aspects of the use of electronic means in the public procurement process, such as rules applicable to electronic communication, storage of data and use, also involves security and electronic signatures and implements the new EU public procurement directives.

Just as the US has an E-Government team in place, the Swedish government also established the 24/7 Agency Delegation. Launched in June 2003, it is tasked with stimulating the development and use of electronic services in the public sector and brought together members from central and local government, industry and academia. This Delegation is mandated to provide innovative thinking, promoting and increasing cooperation between the state, county councils and local authorities, improving the flow of know-how between research activities and concrete implementation projects, and proposing funding arrangements for helping agencies and local authorities to implement the 24/7 Agency concept. It focuses particularly on E-services capability and improvement of major benefits for the public and businesses, and of making the public sector more efficient.

¹⁹⁴ Sweden E-Government Resource Centre
<http://www.egov.vic.gov.au/index.php?env=-categories:m618-1-1-8-s&reset=1> 23.06.2009

3.4. E -Government in Australia

The Australian government has recognised that ICT advances can provide better service delivery, while at the same time improving the efficiency and reducing the costs of government. The significant challenge then of the Australian government is to effectively harness ICT to achieve the above goals. According to www.tomw.net.au, in 2002, the initial E-Government strategy of the Australian government, *Better Services: Better Government*, mapped out the move towards more comprehensive and integrated use of new technologies for government information, service delivery and administration. In 2004, the government released its information economy policy, *Australia's Strategic Framework for the Information Economy 2004-2006*, that outlines the entire government approach to maintaining Australia's position as a leading information economy including a key strategic priority to raise Australian public sector productivity, collaboration and accessibility through the effective use of information, knowledge and ICT¹⁹⁵. The E-Government initiatives of Australia focused on four main areas: meeting users' needs, establishing connected service delivery, achieving value for money, enhancing public sector capability¹⁹⁶.

The E-Government team that was set up is the Australian Government Information Management Office (AGIMO) which oversaw and coordinated implementation of this strategy and tracked progress towards 2010. Online, electronic and voice-based services were fully integrated into government service delivery and the electronic delivery underpinned all other delivery channels, ensuring a consistent base for all activities and providing consistent service no matter how government is approached¹⁹⁷. Through the effective use of technology, the government has improved its structures and processes.

The government of Australia regarded itself as approachable in meeting the user's or citizen's needs. Government information services are easy to understand and locate and interacting with government is quick and straightforward. Hence, it is easy for people to pinpoint the service or information they need, regardless of how and where they initially

¹⁹⁵ Australian E-Government Guide
<http://www.tomw.net.au/technology/it/egovernment/index.shtml>, 17.08.2009

¹⁹⁶ Australia: Information on E-Government Strategy
www.ibls.com/internet_law_news_portal_view 19.05.2009.

¹⁹⁷ Australia National Web Portal
www.govtech.com/gt/418673?topic=117673 14.02.2009.

approach government, for every door is the right door when approaching the government. Regardless of which door is chosen, at most only one onwards referral is needed to avail oneself of an electronic public service. Citing *www.publications.ksu.edu.sa*, Australian citizens are able to choose from a range of service delivery modes, but they prefer the added convenience and functionality of online, electronic and voice-based channels, which they have used frequently¹⁹⁸.

According to *www.finance.gov.au*, authentication and personal or business information are provided only once through a simplified government sign-on, to access government information and services and for ongoing interactions, transactions and updates. There is a single sign-on, except where circumstances require otherwise and it is possible to group diverse transactions and complete them at the same time, without navigating the underlying structure and complexity of government. People are able to interact with many areas of government without needing to understand exactly which agencies deliver which services and privacy and security rights are paramount in all service delivery channels offered by government. Moreover, people manage the integrity of and access to their own personal details and are able to nominate agents to manage personal details on their behalf¹⁹⁹. It should be observed that the government has increasingly managed its programmes and relations with stakeholders electronically, and providing organisations and businesses with the same benefits and options of interacting electronically with the Australian government as citizens' experience. In effect, the connected service delivery has merged the requirements of government and with online and electronic service delivery, and has reduced the cost of interacting with government and in particular the paper burden on citizens, businesses and organisations.

According to the *Australian E-Government Guide*, in 2006 and onwards, the Australian government has reduced by ten percent the letters sent either paper or electronic to its stakeholders. By 2010, the government aims to cut the number of forms that must be filled in and will change the numerous static forms into dynamic forms that will be available from a single entry point where users can automatically enter required details already held by other government agencies, complete their details electronically and trace the resulting

¹⁹⁸ Developing a Successful E-Government
<http://publications.ksu.edu.sa/Conferences/eGovernment%20Conference/E16.pdf> 18.09.2009

¹⁹⁹ E-Government and Information Management
<http://www.finance.gov.au/e-government/index.html> 18.03.2009

actions online²⁰⁰. One should infer that the connected service delivery and the connected government drove a reform of government business processes in Australia. Today, the Australian government presents a consistent and unified face regardless of whether approaches are made in person, over the telephone, using the Internet or in any other medium of technology. This endeavor has resolved the common frustration associated with trying to understand government structures to find the right agency and matches private sector best practice for electronic interactions.

Moreover, the government has also taken the opportunities presented by connected government and technology to improve its business processes. It has restructured poorly designed and redundant processes and reduced duplication by standardising and integrating similar processes across agencies. Moreover, the considerable benefits from its connected approaches has resulted in its government agencies operating in a collaborative, connected manner, rather than in isolation from each other and has provided more agile service delivery and the ability to quickly redeploy services to different sites and temporary locations. In this manner, Medicare Australia has deployed family applications to shops because of the modular design of its systems.²⁰¹

Furthermore, the Australian government's ability to respond to emergencies has been enhanced as all the parties that need to respond to an emergency situation are linked and operated under a common framework. Citing www.egov.vic.gov.au, it is in this way that the Immigration and Multicultural Affairs, Human Services and Foreign Affairs departments have shared the same information models and emergency information systems. Connected government using new technology had also offered new ways to think about policy and delivery. Government policies such as *Australians Working Together* and *Welfare to Work* reflected the opportunities provided by information and service connectivity and illustrated how government can provide a seamless service to people progressing through different stages of initiatives that cross several agencies²⁰². This

²⁰⁰ Australian E-Government Guide
<http://www.tomw.net.au/technology/it/egovernment/index.shtml>, 17.08.2009

²⁰¹ Australians' Use of and Satisfaction with e-Government Services 2007
<http://www.egov.vic.gov.au/index.php?env=-categories:m1534-1-0-0-0,03> 12.2008.

²⁰² 2006 e-Government Strategy: Responsive Government: A New Service Agenda

results in connected Australian government expanding in its approach to systems and opportunities. One should note that a more connected approach to service delivery means more efficient government and that greater use of online service delivery fundamentally reduces costs. The reduction of costs includes first, less double handling and fewer errors in initial transactions and correspondingly less work down the track to identify and make corrections; second, more informed users require less assistance and can be served more quickly; and systems where people maintain their own personal details reduce the direct cost for taxpayers as well as reducing the costs associated with use of outdated information.

According to a report *Australians' Use of and Satisfaction with e-Government Services 2007*, the Australian government assessed its deficiencies in E-Government implementation in areas such as public sector ICT skills and recruitment, ICT business practices, knowledge management, project management and delivery and legislative arrangements as they relate to supporting online and electronic service delivery. AGIMO's comprehensive report, *Australia's Use of and Satisfaction with E-Government Services*, found relatively high satisfaction levels with current government online services. However, it also revealed low expectations of what can be achieved online, and showed that other channels, such as face-to-face, are still preferred for transactions which are considered more complex or ambiguous. In response to this and to improve people's satisfaction when dealing with government and accessing government services, the Australian government reviewed and consolidated its websites. As a result, a simpler, more streamlined government online presence is promoted, which became the principal entry point to the Australian government. This is *australia.gov.au* which incorporates all government entry points and is integrated more securely²⁰³. We reasoned that the government's overall use of information technology has been more efficient where more targeted and strategic investments in technology have seen less duplication in the business processes across different government agencies. Connected government has also provided greater opportunities for agencies to share and re-use technology, reducing overall infrastructure costs and electronic delivery had also served the government's environmental objectives by helping to reduce paper and energy consumption and greenhouse gas emissions.

²⁰³ *Australians' Use of and Satisfaction with e-Government Services 2007*
<http://www.egov.vic.gov.au/index.php?env=-categories:m1534-1-0-0-0,08.07.2009>

The transformation and modernisation of Australian government to establish a connected government involves three main areas: technology, business and people. While it may be true that technology enablement and systems restructuring are key drivers of this change, the consideration of people as a major component cannot be undervalued. Hence, there is an increasing recognition in Australian government to ensure that Australia has the ICT skills it requires. With this, the Australian Government through the ICT Professional and Skills Development Group in partnership with AGIMO has increased the ICT skill level of its employees as part of the process of building agencies' service delivery capability and maturity and also raised the level of information technology literacy amongst executives and senior executives.

3.5. The E-Government of Hong Kong

Hong Kong's vision and mission may be expressed by making Hong Kong the leading digital city. The vision for their E-Government is to use information technology to provide customer-centric services that promote an accessible, accountable and efficient government. In its *E-Government Strategy*, the government of Hong Kong has striven to serve its community by providing integrated, one-stop and customer-centric E-services that deliver increased value and facilitate better access to public services; to transform their government by business process re-engineering that improves service delivery, strengthens the value of customer orientation and enhances efficiency and productivity; promote a more pervasive E-environment that raises the E-literacy of its community and drives the adoption of E-commerce and E-business.²⁰⁴

To fulfil its E-Government vision and mission, Hong Kong has focused its efforts on a number of key priorities for its E-Government development that includes the new strategy for E-Government services delivery, customer relationship management, channel management strategy, E-Procurement and measurement of the benefits of E-Government initiatives. It has been observed that the emerging global trend in E-Government is to provide E-services based on a clustered approach centering on the needs of customer segments, which will result in government developing and providing better E-services. According to www.american.edu Hong Kong considers this as its new E-Government strategy with which it seeks to achieve three overall objectives: first, to enhance the quality of E-Government services and boost their utilisation through introduction of customer segmentation and end-to-end processing; second, to allow more private sector participation so that the government can better leverage on their expertise and experience, and third, to promote the adoption of E-commerce and E-business in Hong Kong through closer integration of public and commercial E-services, thereby increasing the utility and convenience for the users.²⁰⁵

Accordingly, the government of Hong Kong has adopted a service clustering approach for the delivery of E-Government services, by which related E-Government services are grouped into a number of clusters. In addition, each cluster provides, where appropriate,

²⁰⁴ E-Government Strategy. Honkong Portal
<http://www.info.gov.hk/digital21/e-gov/eng/strategy/index.htm> 12.11.2008

²⁰⁵ The Landscape of IT in Hong Kong
www.american.edu/initeb/cc9979a/hongkong.htm 13.12.2008.

related commercial services so as to enhance the customer and commercial value of the cluster. To maximise the value to customers, the service clusters seek to provide services along the whole value chain (e.g. from application for travel documents to purchase of airline tickets and travel insurance) and adopt an end-to-end processing approach (e.g. from e-booking/e-submission to E-Payment). In order that the public can continue to access E-Government services in different clusters conveniently, Hong Kong has set up a one-stop access portal with linkages to various service clusters as the public interface. In an assessment initiative, the Hong Kong government recognised that the formation and development of clusters is an evolutionary process, and the clusters are reviewed from time to time to reflect customer demand and market dynamics.

As regards the technology infrastructure strategy, the Hong Kong government has progressively evolved a technology architecture based on open and interoperable standards that support easy interfacing within government and the private sector. Specifically, a Service-Oriented Architecture, a design principle that focuses on clearly defined interfaces according to business rules and that best supports diverging IT environments of different service agents,²⁰⁶ has been adopted to facilitate service agents in developing front-end applications and connecting them to the back-end systems in government. Furthermore, common services that includes E-Payments required by E-Government services using the infrastructure have been identified and provided to minimise duplication of resources in developing and providing such services. The new technology infrastructure strategy has catered for various combinations of clustering and interface options for joining up the E-services provided by the government of Hong Kong and the private sector.

The adoption of Customer Relationship Management (CRM) principles and practices in the delivery of E-Government services in Hong Kong is a key to the provision of its customer-centric services. This has been in line with its vision of the next wave of E-Government and an important building block of its new strategy for E-Government service delivery that results in better understanding of customer needs and preferences and provides more customer-oriented E-Government services. In channel management strategies, the Hong Kong government services were provided through different channels of service delivery that includes at the counter, by mail, phone, fax, and via the Internet. Conversely, without a strategy for channel management, the provision of E-option as an

²⁰⁶ E-Government-The Next Wave of Development
http://www.info.gov.hk/digital21/e-gov/eng/press/doc/ITBPaper_20050314e.pdf 04. 11 2008.

additional channel of service delivery, alongside the conventional channels, has not brought about the desired benefits such as increasing efficiency and reducing operating costs. Given that the E-channel is normally the most efficient and cost-effective channel of service delivery, a proper channel management strategy together with the necessary incentives have helped migrate customers to the E-channel. Accordingly, the Hong Kong government has promulgated a channel management strategy to provide its bureaus with guidelines on how to enhance the quality and attractiveness of E-services so as to boost their utilisation, the introduction of incentives to migrate customers to the E-channel, the rationalisation of service delivery channels and the scaling down of the more costly channels of service delivery.

Hong Kong's E-Government initiatives have brought citizens ever closer to the government. Stakeholders can easily access a vast amount of public information and many services anytime, anywhere online. According to info.gov.hk the average monthly number of page views of all Hong Kong government websites amounts to 340 million.²⁰⁷ A common look and feel website design has been introduced to further improve navigation and user-friendliness. More than 1,240 public services are now provided with e-options.²⁰⁸ All government bills are provided with an E-Payment option.²⁰⁹ More than 2,740 government forms can be accessed through the Government Forms website and/or the departmental websites.²¹⁰ While for submission of forms, about 1,270 government forms could be submitted electronically. Requests for access to government information are available for submission online.²¹¹ Over 80% of tenders processed by the Government Logistics Department are issued through the Electronic Tendering System.²¹²

The Hong Kong government has also implemented territory-and-government-wide initiatives to put in place an infrastructure for citizens, businesses and the government to yield the benefits of E-Government. To facilitate a universal public access to online government information and services, the government launched a new one-stop portal, GovHK, in September 2006. The portal has been developed to meet citizens' needs,

²⁰⁷ Comprehensive Services

<http://www.info.gov.hk/digital21/e-gov/eng/milestones/service.htm> 11.04. 2008.

²⁰⁸ Ibid.

²⁰⁹ Ibid.

²¹⁰ Ibid.

²¹¹ Ibid.

²¹² Ibid.

offering quicker and more convenient access to a comprehensive range of government information and services frequently sought by residents, businesses and non-residents. To leverage Hong Kong's strengths in exploitation of enabling technologies, their government started issuing multi-application smart ID cards in June 2003.²¹³ The smart identity card, together with the digital certificate and other value-added applications, has built up a community-wide information infrastructure for the government and the private sector to introduce innovative and value-added E-applications. The smart ID card has greatly facilitated the development of E-Government and E-commerce applications in Hong Kong. In addition to using the card for traditional immigration functions as a means of identification, holders of smart ID cards may also choose to use them as library cards and opt to have a digital certificate – the personal E-Cert issued by Hong Kong Post Certification Authority – embedded in them to carry out secure online transactions. This digital certificate (e-Cert) can be regarded as an “electronic ID” of the user²¹⁴ and can be used for authentication of identity and for ensuring integrity, confidentiality and non-repudiation of the data transmitted in an electronic transaction. The use of e-Certs involves a trusted organisation (a certification authority) checking to ensure that the user is the person whom he/she claims to be. Using an e-Cert the person can prove who he/she is, as well as send messages in an encrypted form. The person receiving the message can check with the certification authority to see if it was really sent by the person who claims to be the sender, and whether it has been altered. According to nfo.gov.hk under the Electronic Transactions Ordinance of the Hong Kong government, digital signature supported by an e-Cert which is recognised under the Ordinance has the same legal status as a hand-written signature.²¹⁵

Smart ID cardholders have been able to use their cards for automated passenger clearance since the end of 2004 and automated vehicle clearance since April 2005.²¹⁶ Covering around 7 million people, the smart ID card project probably makes Hong Kong one of the largest populations in the world using smart ID cards, which will further strengthen Hong Kong's position as a leading digital city in the globally connected world.

²¹³ Smart ID Cards

<http://www.info.gov.hk/digital21/e-gov/eng/init/smart.htm> 04.112008.

²¹⁴ Non-immigration Applications for Incorporation into the Smart ID Cards

<http://www.info.gov.hk/digital21/e-gov/eng/press/doc/itbse1220cb1-666-1e.pdf> 04.112008.

²¹⁵ Ibid.

²¹⁶ Smart ID Cards. op.cit.

Moreover, the 1823 Citizen's Easy Link has provided an integrated and one-stop service for handling enquiries and complaints regarding a wide range of services, using one single telephone number. According to www.accenture.com in 2007, over 3.08 million calls were handled. About 90% of enquiries processed were resolved at the first time of calling.²¹⁷ This is a scalable initiative which is being expanded to more departments and new areas of work. The promulgation of the Interoperability Framework has facilitated the seamless flow of information across individual government agencies, as well as more effective communication between the private sector and the government through open standards. Comprehensive information security policies have been established to facilitate the development of reliable and secure E-Government applications. With the enactment of the Electronic Transactions Ordinance and subsequent amendments, the Hong Kong government has a legal environment for the secure and widespread adoption of E-Government transactions.

3.6. The E-Government of Denmark

For a number of years, the Danish public sector has used digitalisation to improve administration and the services offered. These efforts have in many ways been so successful that digitalisation became a natural part of providing public services by the Danish government. In fact, Denmark occupies a leading position internationally on E-Government development, making it to the top spot in 2007 E-Readiness rankings by Economist Intelligence Unit as cited in www.globaltechforum.eiu²¹⁸ Most of the communication between citizens, businesses and the Danish public sector are currently conducted electronically. This has meant in many ways that the public authorities are delivering services faster and more efficiently than just a few years ago. At the same time, this development means that ongoing efforts are made to align with the new challenges and exploit the possibilities naturally arising in an increasingly digitalised society. The continued success of digitalisation requires the Danish government to keep building on local, national and international experience in the digital field and simultaneously ensure that such initiatives are combined to make a joined-up public service provision.

²¹⁷ Visionary Challengers: Hong Kong
www.accenture.com/xdoc/fr/locations/france/pdf/grasehon.pdf 09.12.2008.

²¹⁸ E-Readiness Rankings 2007
www.globaltechforum.eiu.com/index.asp?...&categoryid=29&doc_id=10599 06.11.2008.

E-Government efforts over the next years by the Danish government are designed through a national strategy for public sector digitalisation with three overarching strategic priority areas: better digital service, increased efficiency and stronger collaboration. In fact, the new E-Government strategy of the Danish government is aptly entitled – *Towards a better Digital Service, Increase Efficiency and Stronger Collaboration*. The strategy has built on the experience from two previous E-Government strategies by the Danish government. The first strategy for 2001-2004 primarily marked the start of joint digitalisation cooperation between the municipal, regional and state levels of administration which has become the basic concept behind the Danish approach to E-Government. The second E-Government strategy for 2004-2006 added impetus to the development of internal public-sector digitalisation.

Consequently, the aims of the new strategy of E-Government have raised the level of ambition and set new standards for the development of citizens' services and cohesion across the public sector. The strategy has three priority areas that include: first, digitalisation focused on creating improvements in the service to citizens and businesses; second, digitalisation that enables resources to be transferred from administration to citizen-focused service; and third, coordination and prioritisation of digitalisation efforts in the public sector through more binding, cross-governmental collaboration at all levels.²¹⁹ This new strategy Denmark E-Government has entailed better and more binding cooperation and emphasised that implementation of specific digitalisation measures that are anchored in the individual public authorities. The three overarching strategic priority areas corresponded to independent main themes, but the priority areas also interacted mutually. Correctly implemented, digitalisation facilitated service and quality improvements alike and freed up resources at the same time by enabling tasks to be performed more simply and efficiently.

With the fundamental priority of better digital service, the Danish government has undertaken digitalisation in those areas where it had the greatest impact on citizens and businesses as well as the public sector. Digitalisation has made public service more readily accessible to citizens and businesses and increased the degree of self-service. Hence, better digital service means that public services are more customised and cohesive, so as to

²¹⁹ Danish E-government Strategy 2007-2010
http://modernisering.dk/da/english/e_government_strategy/ 05. 12.2008

support individual citizens' and businesses' day-to-day dealings, irrespective of the underlying administrative organisation. At the same time, the services have been designed to ensure that citizens feel secure using digital channels of communication. Increased efficiency through digitalisation is necessary because the public sector's resources need to be concentrated to a greater extent on personnel-intensive, citizen-focused care and service. Basic social conditions call for the public sector to adapt and evolve. At the same time, the public sector will encounter rising expectations for service options, transparency and quality. It is crucial therefore, that digitalisation should make a greater contribution to the rationalisation of local service provisions and to systematically realise the gains associated with digitalisation projects, through change management and organisational adaptation.

Stronger, binding collaboration on digitalisation is the pivotal factor that further developed the way the Danish public sector organises its digitalisation. Since 2007, Danish government reforms have resulted in larger and more sustainable units which have improved the framework for digitalisation efforts. Increased collaboration and co-ordination do not, however, change the fact that the most essential action in relation to the ongoing digitalisation effort still lies in the concrete digitalisation and modernisation initiatives on the part of each individual municipal, regional and government organisation. In order to materialise this vision and monitor the progress of its realisation, the Danish strategy of E-Government created *five Signposts*. In Signpost 1, the Danish public sector must provide coherent services with citizens and businesses in the centre. In Signpost 2, the E-Government of Denmark must result in improved service quality and the release of resources. In Signpost 3, the public sector must work and communicate digitally. In Signpost 4, E-Government of Denmark must be based on a coherent and flexible infrastructure. Lastly, in Signpost 5, Danish public sector managers must lead the way and ensure that their own organisations are capable of realising the vision. With these signposts, the Danish E-Government set up a national and E-Government portal, *www.Danmark.dk*²²⁰ which provides easy access to public information and services.

Furthermore, in order to support the fulfilment of its strategic objectives, the Danish government has identified a number of Focus Areas which refer to areas that need to be improved to facilitate the successful delivery of E-Government projects.. The identified

²²⁰ Denmark eGovernment Portal
www.danmark.dk 14.09.2008

focus areas included: first, secure realisation and measure results; second, strengthen management and skills; third, renew organisation and corporate culture; fourth, improve communication and knowledge sharing; fifth, develop incentives and financing; and sixth, enhance the infrastructure. In secure realisation and measure results, Danish E-Government has produced added value for users, public authorities and civil servants that are measurable in terms of service improvements, cost reductions and increased user and staff satisfaction. In strengthen management and skills, public sector management and staff were provided with the necessary skills and incentives. In renewing organisation and corporate culture, ICT processes were simplified and automated with a view to providing the greatest possible user satisfaction for the smallest possible use of resources. In improving communication and knowledge sharing, ICT systems provide communicate nag sharing of information across the boundaries of public bodies and towards citizens and businesses. In developing incentives and financing, investments in E-Government encouraged examination of the entire case and provided a number of simple financing models that address these problems. Lastly, in enhancing the infrastructure, Denmark is constructing a coherent technical and legal infrastructure for E-Government that includes improving legislative issues surrounding data sharing and, from a technical point of view, requiring a common language in the data formats that conform to a common, open, national standard.

In 2000, the Danish government enacted the E-Signatures/ E-Identity Legislation Act on Electronic Signature which implements the European Directive on Electronic Signatures.²²¹ This set up a national digital signature scheme whereby all citizens received a free software-based digital signature that provides sufficient security for most public sector and private sector transactions. As we all know, any government engaged in a programme to deliver public services electronically is rapidly confronted with the crucial issue of user identification and authentication. Finding a way of verifying the identity of users is essential for building trust and pressing for the take-up of online services and transactions.

Denmark E-Government has made first attempts to create a digital identity for users of E-Government services that is based on Personal Identification Numbers (PIN) and passwords. However, these solutions have proved to be insufficient for full electronic

²²¹ E-Government- Denmark
www.egov.vic.gov.au/index.php?env=-innews 12.07.2008.

transactions in a multi-organisational 24x7 environment, which particularly applies to E-Government services where higher-level security and authentication are highly required. In this regard, the real technical solution for secure user identification is the digital signature, a piece of software that identifies individual users and makes it possible to authenticate them through a certification scheme based on a Public Key Infrastructure (PKI) and the services of trusted third parties. But, so far, the implementation of digital signatures has been much slower than expected for a number of reasons, such as the lack of information and of confidence of potential users, the complexity of the process to obtain a signature, or the cost for the user of obtaining and maintaining the signature. The main barriers are the lack of services on offer that require digital signatures, service providers, who are wary of deploying such services when so few people have digital signatures, and service users, who avoid acquiring a signature when so few services require it. To cut through the barriers and overcome the deadlock of demand waiting for supply and supply waiting for demand, many European governments have decided to kick-start the market by issuing digital signatures to their citizens themselves. Most of them have chosen a hardware-based solution, consisting of embedding the digital signature in a smart card either a mandatory electronic ID card or a voluntary card. However, these solutions are expensive, as they require huge investments by both government and users in hardware, like smart cards and smart-card readers. Furthermore, they can meet significant resistance as electronic ID cards usually contain a wealth of personal data and information beside the digital signature.

The E-Government of Denmark has made a strategic choice that is different from most of its European neighbours. It has decided to issue citizens with free, software-based, official digital signatures, distributed through many suppliers. The aim is to enable all Danes to conduct their business with public authorities securely from their home computers, using the same identification system for all public E-services but without having to pay any additional charge for proving their identity or having to carry potentially intrusive electronic ID cards. This solution has achieved a wider availability and uptake of signatures, which in return have accelerated the rollout of new services.

3.7. E-Government in Singapore

According to www.igov.gov.sg, the foundations of the E-Government initiatives of Singapore started with their Civil Service Computerisation Programme which focused on improving public administration through the effective use of ICT.²²² This has involved automating work functions and reducing paperwork for greater internal operational efficiencies, and, over time, this has evolved into the provision of one-stop services. Then in the early 1990s, emphasis shifted towards the consolidation of computing resources. Today, Singapore has become one of the most advanced E-Governments in the world and has been recognised internationally as a leader in E-Government developments, consistently ranking in the top sixth spot in 2007 and 2008 E-Readiness rankings by the Economic Intelligence Unit.

The Singapore government implemented in 2000-2003 its first E-Government action plan which focused on three important components, namely: Government-to-Citizens, Government-to-Businesses and Government-to-Employees. On Government to Citizens or (G2C), the citizens are able to interact online with the government on a vast range of matters 24 hours a day, seven days a week. Their E-Citizen Portal, www.ecitizen.gov.sg has provided a single access point to government information and services and is organised according to “life events” rather than by Ministry or Department, covering such areas as family planning, education and recreation. Beyond providing citizens with a central window to government services, E-Citizen also helped facilitate the improved coordination between different government agencies. This approach has proved to be successful as the hit rates of the portal have increased from 240,000 per month in October 2001 to 14 million hits two years later; by October 2004, its popularity had risen to 24 million hits per month. Behind the success of the E-Citizen Portal is the Public Service Infrastructure, a central facility that allows quick and efficient deployment of E-services and the progressive deployment of common features to support E-services regularly. Furthermore, the E-Government of Singapore launched on 1 March 2003, the SingPass or Singapore Personal Access, which established a nationwide personal authentication framework for E-services. The SingPass framework made it more convenient for users to transact online with the government having just a single identification and password to remember. All Singapore residents above the age of 15, employment pass holders and their dependents

²²² Singapore Government
http://www.igov.gov.sg/Strategic_Plans/iGov_2010/ 11.12.2008.

are eligible for SingPass. As of 2004, there were more than 7.9 million SingPass transactions from a growing user base of more than 800,000 SingPass holders.²²³ To enhance the E-service experience for their customers, they have continued to build on the success of the E-Citizen Portal, Public Service Infrastructure, Singapore Personal Access and other initiatives to develop more customer-centric services. This has prompted most government agencies to develop E-services that perform fairly similar functions – collecting payment, authenticating customers, ensuring security, collecting or exchanging data with other agencies.

The second component of the E-Government action plan of Singapore is the Government to Business (G2B) which encourages the business community to transact online with the Singapore government. Accordingly, the government has a national drive to promote a pro-enterprise environment to facilitate business growth in Singapore; having easy and convenient online access to government agencies at all times translates into savings in time and money for businesses as well as for the government. Previously, incorporating a new company in Singapore took five days and cost S\$ 1, 200 to S\$ 35, 000 depending on company size; however, presently, through E-Service, it takes only 15 minutes and costs S\$ 300 only²²⁴.

As a second component, the Singapore E-Government has established a G2B portal, *www.business.gov.sg* which became the first entry point for all local and international businesses to access a full collection of aggregated and integrated information and services, also business and industry topics that include government assistance programmes, protecting business ideas and market research, all useful information for businesses. At the same time, a key G2B system, BizFile, was developed to enable members of the public and the business community to file all prescribed business or company forms and their supporting documents for the purpose of registering their companies and fulfilling statutory disclosure requirements, any time over the Internet. This system has a suite of electronic services that allow customers to purchase forms lodged and retrieve information about ACRA-registered businesses and companies. Moreover, the Government Electronic Business (GeBIZ) was built to serve as an online procurement system for the government where local and international companies may participate in business opportunities with the

²²³ Government to Citizens (G2C)
http://www.igov.gov.sg/Strategic_Plans/eGAP_I/eGAP_I_G2C.htm 14.09.2008.

²²⁴ Government to Businesses (G2B)
http://www.igov.gov.sg/Strategic_Plans/eGAP_I/eGAP_I_G2B.htm 06.11.2008.

government in a more efficient, transparent and secure environment. With this online procurement system, the transaction value of procurement conducted through GeBIZ has more than doubled since the first E-Government Action Plan, reaching about S\$655 million in 2004.

The third and last component of Singapore's E-Government initiatives premised that public officers are crucial to its successful E-Government strategy. Singapore public officials played an important role in ensuring that the Singaporean government benefits from new opportunities arising from promising technologies and equipping them with the relevant skills and expertise to operate in an environment that is increasingly collaborative, customer-centric and consultative. The Singapore government has launched several programmes to lay the foundation of a networked government that includes: first, the Technology Experimentation Programme (TEP) which ensures that the Government remains innovative in the use of ICT to achieve new levels of excellence and improved delivery of public services; second, Knowledge Management Experimentation Programme (KMEP) which nurtured good knowledge management ideas in the public sector, anchored on the principle that good decision-making hinged on having the right information at the right place; third, the Broadband Infrastructure for Government (BIG) which gave government agencies flexibility in the choice of broadband and mobile roaming media and leveraged public telecommunication networks; fourth, the Government Access Infrastructure (GATE) which provided secure access to the government network via a wide range of channels that include dedicated dial-up, ADSL, cable modem and other subscription services offered by Internet Service Providers

3. 8. The E-Government of United Kingdom

Citing www.cio.gov.uk, modern governments with serious transformational intent see technology as a strategic asset and not just a tactical tool as technology alone does not transform government; however, government cannot transform to meet modern citizens' expectations without it. United Kingdom saw the complementary role of government and ICT that its current E-Government strategies *Transformational Government-Enabled by Technology* and *Transformational Government Implementation Plan* published in 2005 and 2006 respectively have implemented the UK's strategy on E-Government and set out its vision for a long-term transformation of public services to provide the efficient and

effective services that citizens want²²⁵. In other words, UK's E-Government vision is about better usage of technology to deliver public services and policy outcomes that have an impact on citizens' daily lives, including greater choice and personalisation, delivery of better public services, more benefit to communities by reduction of burdens on front line staff and breaking of cycles of crime and deprivation; and improvement of the economy through better regulation and leaner government.

According to archive.cabinetoffice.gov, the technology-enabled transformation of the UK government has compounded many advantages that include: first, giving citizens and businesses choice of new channels for service and personalisation in their interactions with government; second, helping taxpayers to benefit from efficiency gains; third, citizens, businesses benefit from better regulation, reduced paperwork and lower costs from leaner, modern, more effective public sector processes; fourth, public servants have better tools to undertake their jobs; fifth, policy makers are provided with exhaustive inputs from stakeholders; sixth, managers are able to free resources from back office to the front line; and seventh, citizens feel more engaged with the processes of democratic government.²²⁶

According www.e-government.cabinetoffice.gov.uk, in achieving this vision, the UK E-Government has pursued three key transformations that include: first, services enabled by IT are designed around the citizen or business, not the provider; second, the UK government has moved to a shared services culture; and third, broadening and deepening of government's professionalism in terms of the planning, delivery, management, skills and governance of IT-enabled change. These transformations have improved the customer experience, achieve better policy outcomes, reduce paperwork burdens and improve efficiency by reducing duplication and routine processing, leveraging delivery capacity and streamlining processes. Furthermore, it has resulted in more successful outcomes; fewer costly delivery failures; it has also increased the confidence of citizens and politicians in the delivery of change by the public services²²⁷. One can note that UK's E-Government vision is not just about transforming their government through technology but also about making their government transformational through the use of technology and

²²⁵ Transformational Government

http://www.cio.gov.uk/transformational_government/strategy/contents/vision.asp 11.10.2008.

²²⁶ E-Government Unit

<http://archive.cabinetoffice.gov.uk/e-government/>

²²⁷ E-Government of UK

<http://archive.cabinetoffice.gov.uk/e-government/> 17.05.2009

creating and retaining the capacity and capability to innovate and use technology effectively, as this is the only way in which public services can keep up with a continually changing, globalising society.

As cited in www.direct.gov.uk, the UK government launched in March 2004 *Direct.gov.uk* as the UK Government's citizen portal.²²⁸ This portal has provided citizens with a single entry point to online public services. According to www.xml.coverpages.org, unlike its predecessor, UK online, *Direct.gov.uk* is organised on the basis of major public service areas (e.g. health, education, employment, etc.) and of target customer groups (parents, disabled people, young people, etc.). The depth of information presented on *Direct.gov.uk* is also much greater, reducing the need for users to navigate further sites. To this end, the content of the portal is maintained not by a central team but by "franchise teams" within government departments²²⁹. Since April 2004, the *Direct.gov* service is also available via digital TV, enabling more than ten million UK households equipped with digital television to access public services information through their TV sets. A separate E-Government portal for businesses, *BusinessLink.gov.uk*, was also launched in November 2003, providing access to government information and services for businesses, business owners and managers²³⁰.

UK E-Government has a robust network infrastructure. According to www.direct.gov.uk, as early as 1998, the Government Secure Intranet (GSI) was established as the primary network infrastructure for connecting and joining up central government departments and agencies. This network infrastructure provided a secure and reliable connection to the Internet, including secure access to the Web, file transfer and search facilities, directory services, Web publishing and a mechanism for exchanging electronic mail both within the GSI community and over the Internet. An upgraded and improved version of the GSI was introduced in 2004 that provided users with restricted-level access to better services and functionalities while at the same time driving down costs. Based on an IP Virtual Private Network, the new service is capable of carrying voice and video data, involves broadband technology, and allows for separate virtual private networks for closed user groups. Furthermore, it expanded beyond the boundaries of the previous network to cover local

²²⁸ Directgov- K Government
www.direct.gov.uk 06.07.2009.

²²⁹ Government Interoperability
<http://xml.coverpages.org/egif-UK.html> 12.07.2009

²³⁰ Business Support and information
www.businesslink.gov.uk 12.04.2009

authorities and is designed to become a central infrastructure for E-Government countrywide²³¹.

UK E-Government has also established an E-identification and E-authentication infrastructure. As cited in www.gateway.gov.uk, the central UK identification platform is the Government Gateway.²³² Launched in February 2001, it embraced the central registration and authentication engine that enables secure authenticated E-Government transactions to take place over the Internet. However, users/ customers needed to register with the Gateway in order to enroll for online government services and subsequently transact securely with government departments. The Gateway is built on open standards and enables the joined-up delivery of government services by allowing different systems in different departments to communicate with the Gateway and with each other. Depending on the type of government transactions, user identification is based either on a digital certificate issued by an accredited certification authority, or on a User ID (supplied by the government Gateway) and a password (chosen by the user) for government services that do not require the level of security provided by digital certificates. Over the longer term, UK E-Government prefers electronic ID cards to become the better identification method for E-Government services. According to www.eema.org these UK E-ID cards would contain a microchip storing personal data, biometric identifiers and an electronic signature for secure access to e-service²³³.

Furthermore, UK E-Government has created a viable legal environment for its E-Government initiatives in its passage of the Electronic Communications Act 2000 which aims to help build confidence in electronic communications by creating a legal framework for electronic commerce and the use of electronic signatures, both in the private and public sectors, also the Electronic Signatures Regulations 2002, which implements in UK Law the European Directive on a Community framework for electronic signatures.

²³¹ Website of UK Government

<http://www.direct.gov.uk/en/index.htm> 14.07.09.

²³² Government Gateway

<http://www.gateway.gov.uk/> 05.11.2008

²³³ The UK E-ID

<http://www.eema.org/index.cfm?fuseaction=focus.content&cmid=326> 09.08.2009.

3.9. The E-Government of Norway:

Norway has a realistic vision of how information and communications technology serves as a powerful agent of change and that these changes can have a wide range of social implications, both positive and negative impacts on the Norwegian way of life. Like any other nation on earth, Norway is primarily concerned with participating in the knowledge economy as a means of protecting its national identity, economy and empowering its citizenry. As their economy is highly dependent upon petroleum and other natural resources, Norway has recognised this dependency and attempted to diversify its economy to include information technology and other industries in the event that the demand for natural resources dwindled. Hence, the Norwegian government has identified information technology as a priority in an attempt to become competitive in the knowledge economy. According to www.oecd.org, in 2000, the Norwegian government has established a national policy that concentrates on three basic principles: Access, Knowledge and Confidence.²³⁴ These three principles align quite well with Norway's national commitment to education which boasts a remarkable 100% literacy rate.²³⁵ The first principle, network access, is meant to convey that citizens of Norway will have access to information and technology. The second principle, knowledge, refers to a commitment to empowering its citizenry with the understanding of technology for the purpose of controlling its impact on each and every Norwegian. The last principle, confidence, is meant to convey that information and communications technology should be a positive facilitator, rather than a social hindrance or threat. These three principles are clearly indicative of Norway's persona, which is a mixture of welfare and capitalism.

According to www.ddsi.org, the Norwegian government has established its national ICT policy through a programme called eNorway. This programme is divided into five basic sectors that include first, individuals, culture and the environment; second, education; third, Norwegian industries; fourth, Norway's workforce and fifth, government initiatives. However, it can be observed that Norway has 430 municipalities and 341 central government departments with independent decision-making responsibility²³⁶. One can infer that this scenario provides hundreds of entry points for users or customers in whom

²³⁴ OECD E-Government Studies: Norway

http://www.oecd.org/document/29/0,3343,en_2649_34129_35255837_1_1_1_1,00.html 08.12.2008.

²³⁵ Norway E-Government

<http://www.american.edu/initeb/bb3747a/Norway%20-%20Strength-N-Weaknesses.htm> 11.10.2008.

²³⁶ eNorway Plan

<http://www.ddsi.org/htdocs/Documents/final docs/> 16.08.2009

ICT can become a powerful tool to bridge all government municipalities and departments. Citing *www.accenture.com*, in this regard, Norway E-Government established Altinn as the gateway to public services for all businesses and My-Page as the central entry point for citizens as noted in *www.accenture.com*²³⁷. The Altinn, as the gateway to public services for all businesses, has the purpose of giving businesses access to all electronic services which require written communication with the public sector, and an option to have all replies to applications, decisions etc. sent to an electronic mailbox in Altinn, a direct link to all relevant forms, and the possibility to report information once, and not to repeat the procedure over and over again to different agencies. Altinn became fully operative in the spring of 2004, and has been a success. In 2006, figures show that 74 % of business enterprises and self-employed persons delivered their tax return form electronically via Altinn, an impressive 91% of the companies returned the shareholders register form electronically, the electronic share of Value Added Tax reports from businesses has increased to almost 80% from 2001, and more than 22 million individual forms had been submitted via the portal by the end of 2006.

According to *www.tmcnet.com*, the Norwegian E-Government also developed My-Page as the central entry point for citizens. Described as user-defined, secured and open-source-based, this one-stop-shop solution can be entered with a single-sign-on; citizens can carry out personalised public E-services and check information held on them by various public agencies.²³⁸ My-Page allows for a simple and effective dialogue with the public sector and involves both Norwegian government agencies and municipalities, thus covering the whole range of public services for citizens. My-Page offers transactions and register services; transaction services are interactive services requiring a dialogue with the user, while register services are lookups for individual information held by different governmental services.

In 2002, the Electronic Signature Act was established by the government of Norway in support of E-identification or E-authentication; it contains detailed provisions for electronic identification of persons and gives qualified electronic signatures equal status to traditional signatures for administration purposes. An 11-digit personal identification number is provided to any individual in Norway by registering with its National Register.

²³⁷ Government of Norway: Nationwide Electronic Reporting System
http://www.accenture.com/Global/Technology/Service_oriented_Architecture 25.07.2009

²³⁸ Norwegian Government Citizen Centric Transformation
www.tmcnet.com/news/2007/09/20/2954440.htm 28.06.2009.

By publishing common PKI specification, some commercial actors have provided E-Signature solutions that include Telenor Mobile Smartpay, using mobile phone technology, banks through bank cards and a transactional model on a pay-per-service basis. According to www.igovernment.in, the E-Government of Norway established a public infrastructure known as the common eID interoperability hub in 2008.²³⁹ This hub handles and verifies eID solutions currently being used and ensures safe access to online services, tackling security risks and preventing users having to deal with a large number of different user names, passwords and pin codes for accessing public websites.

3.10. The E-Government of Finland

According to wwwefinland.fi, Finland is highly regarded by the world community as exceptionally strong in its ICT policies, abilities and potential.²⁴⁰ Considered before as one of the inferior countries of Europe, Finland had now established a superb ICT infrastructure, a highly trained, well-educated workforce and a collaborative synergy between government, academia and business that has resulted in a national environment that consistently ranks amongst the top of all nations when it comes to ICT. The Finnish society is Finland's key resource and key element of success as it is self-directed towards innovation and technological advancement.

The Finland government has supported its people with proactive, pro-growth governmental policies, with deregulation and liberalisation within the ICT field that generates competition and a growing entrepreneurial spirit. This spirit has been bolstered by the utilisation of Finland's world-class education system, which has accepted the challenge of creating an information society workforce. It should be noted that Finland is home to a number of powerhouse global ICT companies, of which Nokia is the first and foremost, as well as thousands of SMEs dedicated to supporting and serving Finland's information society as they provide the revenue and economic growth required to sustain Finland's status on the world ICT stage.

²³⁹ Norway mulls common EID Hub
www.igovernment.in/site/norway-mulls-common-eid-hub 17.05.2009.

²⁴⁰ eFinland
<http://e.finland.fi/eGovernment/> 14.03.2009.

According to www.epractice.eu, Finland E-Government launched in 2002 the citizen portal Suomi.fi²⁴¹ that provided a single access point to public information, administrative forms and online services, and also replaced a previous life cycle-based portal, the Citizen Guide. This portal contains a selection of forms and online services from both state and local authorities and is structured according to one's daily life events. Furthermore, the portal has a customisation function in 'My eServices' that allows identified users to save web forms produced by several organisations, and use the information saved when filling a new form. Most forms can either be downloaded, printed and mailed, or pre-filled and submitted electronically. In order to secure online transactions, forms that are pre-filled with personal data and several electronic transactions require prior authentication, e.g. the Finnish Electronic ID Card.

Citing www.eng.utah.edu, the Finnish eID Card or FINEID is a smart card that features the holder's photograph and contains a microchip that stores the user's eNumber. In addition to normal identification, the FINEID card can be used for electronic transactions and as an official travel document for Finnish citizens in Nordic and 27 other European countries.²⁴² In electronic transactions, the FINEID acts as a secure network key for all online services which require identification of a person making an official electronic signature and for encrypting email messages and attachments. The card's chip can be upgraded to enable the use of fully functional digital signatures and citizens may choose to have their health insurance data included in their eID card to act as their health insurance card. In pursuance of the authentication process of the Finnish smart card, the Finnish government mandated its Population Register Centre as the certification authority. This centre creates an electronic identity that consists of a series of numbers and a check character that helps identify Finnish citizens and foreign citizens permanently residing in Finland who are entered in its Population Information System. An electronic client identifier is activated when a person receives a certificate card, utilising the Population Register Centre's Citizen Certificate. This Citizen Certificate is an electronic identity which contains, among other information, a citizen's first name, last name and an electronic client identifier that is attached to the chip ID card (FINEID which has also embedded a Visa Electron card issued by a designated bank and a SIM card of a mobile telephone. Furthermore, the

²⁴¹ eGovernment Fact sheet: Finland
www.epractice.eu/en/document/288228 17.05.2009.

²⁴² Finnish ID Card FINEID
www.eng.utah.edu/~sdean/doc/FinnishEid.html 26.07.2009

Population Register Centre also issues Organisation Cards to companies and legal persons that contain Organisation Certificates that are used to verify a given person's position as a representative of the company, organisation or associated group. These certificates have made it possible to provide an undisputed electronic signature as defined by law and to provide authentication of network users and their access rights.

Just like other European countries, the Finland government also established a legal framework for the implementation of its E-Government initiatives when it enacted its Electronic Signature Act that enforces the EU Directive on a community framework for electronic signatures and gives legal value to the use of electronic signatures for eCommerce and E-Government services. In addition, the Act aims to enhance information security and data protection in the field of electronic commerce and services. It grants the advanced electronic signatures and the contracts signed electronically using advanced electronic signatures with the same legal value as that of handwritten signatures and handwritten-signed contracts. An electronic signature is considered when it is created by a secure signature creation device and confirmed with a qualified certificate.

3.11. The E-Government of Bahrain

The Kingdom of Bahrain recognised the importance of E-Government and had therefore set-up an E-Government Authority to provide direction and decision into developing and implementing a comprehensive E-Government strategy that is focused on ensuring effective delivery of government services to citizens, residents, businesses and visitors. According to www.e.gov.bh, the E-Government strategy of Bahrain is summed up by the phrase "Delivering Customer Value through Collaborative Government".²⁴³ The Bahrain government regarded the recipients of government services not as beneficiaries but as customers with unique needs and requirements.

Though many initiatives of E-Government in other countries have focused on enhancing public service delivery through the phased electronic enablement of these services, the E-

²⁴³ Kingdom of Bahrain eGovernment Portal
www.e.gov.bh 22.03.2009.

Government of Bahrain have preferably recognised that identifying the channels of customers' preference is a critical success factor for effective E-Government. Thus, the E-Government of Bahrain has facilitated the delivery of its public services through multiple channels that include: first, an E-Government portal; second, a mobile portal; third, a national contact centre; and fourth, common service centres.

The E-Government Authority of Bahrain has established a one-stop-shop portal that acts as the key service delivery channel for individuals, business, government and visitors, and integrates and provides all types of vital services. Available in Arabic and English, the portal provides informational, interactive and transactional services, including an online payment facility, and also provides a platform for customers to give their feedback and participate in framing government policies and enhancing service delivery. In 2008, the portal address was changed to an easier address as a result of a customer survey which revealed the difficulty of memorising the old address. Citing *ameinfo.com* the E-Government Authority conducted an annual customer satisfaction survey and found that 75 percent of the respondents never used the E-Government portal, due to difficulty in remembering the portal address.²⁴⁴ The E-Government portal address is now *www.e.gov.bh*.

The second channel of delivery for E-Government initiatives in Bahrain is the Mobile Portal, *www.bahrain.bh/mobile* that allows anyone with a mobile phone to communicate with complete ease with all government entities and utilise their services. The services which have been specifically customised for mobile phones are accessible through a mobile version of the National Portal through any WAP-equipped phones, in addition to other services available through SMS. This mobile portal includes most government services, i.e. electricity and water bills, tracking of postal packages, flight information, school examination results and registration of complaints to various government entities. The third channel of delivery is the National Contact Centre which is a strategic move to enhance communication between the public, government ministries and authorities in the Kingdom of Bahrain. This is a 24/7 contact centre designed to create easier access and

²⁴⁴ Bahrain launches eGovernment strategy and new national portal
<http://www.ameinfo.com/121245.html> 06.05.09.

provide end to end government services that will enable customers to interact with government via telephone, email and fax. Moreover, it provides access to a vast range of services for government departments including information on office locations, documentation requirements, government procedures, laws and visa regulations.

The fourth channel of delivery for E-Government initiatives in Bahrain is the Common Service Centres that also provides a convenient, one-stop-shop for customers but targets a segment of society which prefers low-tech E-Government solutions or currently has difficulty in accessing E-Government Services through the internet. Trained staff is present to help customers access the services and provide hands-on training in how to complete the E-services. These centres have spared customers the time and effort of physically going from one ministry to another, and at the same time reduced the traffic congestion and queues. Common Service Centres set up across the governorates of Bahrain, particularly customers' hot touch points that includes post offices, community and commercial centres that offer convenient and easy access..

According to www.gemalto.com, the E-Government of Bahrain promotes the Smart Card or Bahrain Electronic ID Card in support of its E-Government initiatives. This Smart Card combines three current cards into one that includes the immigration ID card, issued by the General Directorate for Passports, Nationality and Residence (GDNPR), driving license, issued by the General Directorate for Traffic (GDT), and Central Population Registry (CPR) card. In future, this Smart Card will also offer a wide range of additional services and information, including health records, labour information, electronic payments and as a travel document. Further, this card establishes a strong infrastructure through its Government Data Network (GDN) that acts as a Government - wide secured intranet infrastructure connecting all the ministries and provides the necessary connectivity for all E-Government initiatives²⁴⁵.

²⁴⁵ Bahrain Electronic ID Card
www.gemalto.com/brochures/download/bahrain_id.pdf 13.08.2009.

3. 12. Conclusion

This chapter has discussed the salient strategies of E-Government initiatives of the United States, Sweden, Australia, Hong Kong, Denmark, Singapore, Norway, Finland and Bahrain. The first nine countries have been identified as top performers in E-Government initiatives and are in the top ten of the E-Readiness rankings of 2008 conducted by the Economist Intelligence Unit (EIU) which used a design criterion in measuring E-Readiness rankings that includes connectivity and technology infrastructure, business environment, social and cultural environment, legal environment, government policy and vision, consumer and business adoption. Bahrain is purposively included to analyse a state in a similar Gulf environment to Dubai. The purpose of this chapter is to identify and analyse the best practices and initiatives of these states as well as their barriers in E-Government implementation by which the researcher will anchor the formulation of a particular eGovernment framework for the Emirate of Dubai.

The scrutiny of the selected countries has revealed universal initiatives and a resolution of the barriers against E-Government that they had to face in their transformation to E-Government systems. Foremost, these countries have recognised the importance of ICT in the improvement of government efficiency and effectiveness and governments' responsiveness to citizens. To spearhead the preparation and implementation of E-Government, these countries have established task forces or teams to set up a unified Web portal that relies on integration of different services and close co-operation of different government authorities and levels of government. In the delivery of E-Government services, these countries have adopted customer relationship management principles that have resulted in a more customer-oriented delivery of such services. One critical enabler of the E-Government initiatives in these countries is their legal framework which regulates the use of electronic signatures, smart cards, electronic commerce, obligations and procurement.

CHAPTER IV

THE E-GOVERNMENT AND THE EMIRATES OF DUBAI

The Etymology and History of Dubai

The word Dubai, according to Fedel Handhal, a researcher in the history and culture of the UAE, may have come from the word Daba, a derivative of Yadub, which means to creep. It can be deduced that the etymological origins of the Dubai word may have a reference to the flow of the famed Dubai Creek inland²⁴⁶. According to *www.dubaians.com*, in 1883, some 800 members of the Bani Yas Tribe, led by the Maktoum Family, settled at the mouth of a creek in Dubai. The creek was then a natural harbour and Dubai became a centre of fishing, pearling and sea trade in the 18th century. Furthermore, this salt water creek had also served as a minor port for dhows coming from as far away as India and East Africa; this further strengthened the commercial standing of Dubai. At the turn of the 20th century, Dubai became a successful port with many souqs (Arabic for market) at the side of the creek which was considered then the largest on the coast with a steady throng of visitors and businessmen²⁴⁷.

However, as a result of the increasing number of ships that goes in and out, the creek began to silt in the 1950s.²⁴⁸ The late Ruler of Dubai, His Highness Sheikh Rashed bin Saeed Al Maktoum, decided to have the waterway dredged, an action regarded as an ambitious, costly and visionary project. However, the Sheikh's move resulted in an increased capacity for handling numerous cargoes in Dubai, which further strengthened Dubai's position as a major trading and re-export hub. When oil was discovered in 1966, Sheikh Rashed strategically made use of the oil revenues to speed up the infrastructure development of Dubai and the pace of development was frenetic. Roads, ports, schools, hospitals, modern telecommunications networks and buildings were constructed rapidly everywhere, including a new port and terminal building at Dubai International Airport, runway extensions that could accommodate any type of aircraft, the largest man-made

²⁴⁶ Information Dubai
www.encyclopedia.vbxml.net/Dubai 13.06.2008

²⁴⁷ History of Dubai
www.dubaians.com/history.php 15.07.2009

²⁴⁸ Dubai Creek Dredging
www.dubaiasitusedtobe.com 23.11.2008.

harbour in the world at Jebel Ali and a freezone to accommodate foreign business investments. Visionary leadership, high-quality infrastructure, an expatriate-friendly environment, zero tax on personal and corporate income and low import duties became Dubai's formula for development and the inevitable result was that Dubai quickly became a business and tourism hub for a region that stretches from Egypt to the Indian sub-continent and from South Africa to the rest of the world.

Quoting www.uae-embassy.org/uae/history, since the 1960s, Sheikh Zayed bin Sultan Al Nahyan, then ruler of Abu Dhabi, and Sheikh Rashed bin Saeed Al Maktoum had dreamed of creating a federation of the Emirates in the region. Their dreams were realised in 1971 when Dubai, Abu Dhabi, Sharjah, Ajman, Umm Al Quwain, Fujairah and later in 1972 Ras Al Khaimah, united to create the United Arab Emirates. In 1973, Dubai joined the other Emirates to adopt the UAE dirham as a uniform currency. Under the late Sheikh Zayed, the first President of UAE, the country has developed into one of the richest in the world with a per capita GDP in excess of US\$17,000 per annum. In the 1980s and early 1990s, Dubai took a strategic decision to emerge as a major international-quality tourism destination by pouring investments into a tourism infrastructure.²⁴⁹ The present Dubai Ruler, Sheikh Mohammed Bin Rashed Al Maktoum who is also the UAE Prime Minister and Vice President, has steered Dubai to become the Arab Region's leading economic and ICT hub. He laid down strategic approaches that developed the emirate's dynamic economic sectors that include tourism, ICT and international trade, established strategic free zones to encourage foreign investments and businesses and re-structured Dubai's government to integrate eGovernment initiatives to achieve efficiency and effectiveness in its operations, governance and delivery of public services. In his book, *My Vision – Challenges in the Race for Excellence*, Sheikh Mohammed divulged that he has aspired for Dubai to be a global centre of excellence, creativity and leadership and to be the first in civil global trade, tourism and services that are able to provide structures and the ideal environment.²⁵⁰ Dubai's potential to provide the appropriate conditions for business success is supported by its expertise in the field of international trade, state-of-the art infrastructures, latest technological systems and processes and establishment of

²⁴⁹ History of UAE

www.uae-embassy.org/uae/history 15.03.2009

²⁵⁰ Translation of Sheikh Mohammed Bin Rashed Al Maktoum's *My Vision -Challenges in the Race for Excellence*.

See Appendix no. 11.

commercial free zones. **Appendix no. 11** shows the Translation of *My Vision – Challenges in the Race for Excellence* of Sheikh Mohammed Bin Rashed Al Maktoum.

4.2. The Nature and Geography of Dubai

Dubai is situated on the Arabian Gulf, in the northwest of the United Arab Emirates and with an area of 4,114 km² (1,588 mi²); it is the second largest emirate among the seven Emirates or states that makes up the UAE. This federation includes Abu Dhabi, Sharjah, Ajamn, Umm al Quwain, Ras Al Khaimah and Fujairah. Among the Emirates, Dubai ranks as the country's most important port and commercial centre. It has a natural inlet from the Gulf, the Dubai Creek, that divides the city into the Deira district to its north and Bur Dubai on its south. The Emirate of Dubai is bordered with Abu Dhabi in the south, Sharjah in the northeast, and the Sultanate of Oman in the southeast; the Arabian Gulf borders the western coast of the emirate. The location of Dubai on the map is precisely positioned at 25.2697° N and 55.3095° E. Seismically, Dubai is in a very stable zone – the nearest seismic fault line, the *Zargos Fault*, is 120 km from the UAE and is unlikely to have any seismic impact on Dubai. Experts also predict that the possibility of a tsunami in the region is also minimal because the Persian Gulf waters are not deep enough to trigger a tsunami.²⁵¹ Dubai benefits from an arid subtropical climate that offers pristine blue skies and much sunshine throughout the year. The weather is hot and dry with many months recording temperatures of over 40 °C (104 °F). The hottest months are between June and September; the coolest time is between December and March. There is very little rainfall in Dubai, but when showers do fall it is mainly in the cooler months. In the time zone, the UAE, and Dubai, are four hours ahead of GMT.

The Economy and the GDP Growth of Dubai

The historical economic growth of Dubai is unprecedented and impressive. According to *Dubai Strategic Plan 2015*, since the year 2000, GDP has been growing at a compounded annual rate of 13 percent, by far exceeding that of its counterparts in the Gulf Cooperation Council (GCC).²⁵² Furthermore, the Dubai economy has also been growing faster than the developing economies of China and India and the developed economies of Ireland,

²⁵¹ Earthquake risk in Dubai 'lower than that of London
[http:// www. UAEInteract.com](http://www.UAEInteract.com) 23.04.2009.

²⁵² Dubai Strategic Plan 2015
http://www.dubai.ae/en.portal?topic,hm_dxbstgplan,0,&_nfpb=true&_pageLabel=misc 20.01.2009.

Singapore and the US.²⁵³ Its vibrant economic growth has been attributed by many as a result of a bold and visionary leadership and innovative human resources, government policies aimed at improving the business and investment environment, as well as government initiatives to establish specialised zones and mega projects that includes Internet City, Media City and Jebel Ali Free Zone. These developments helped attract regional liquidity in the form of Foreign Direct Investments (FDI) and ensured a leading role for Dubai as a globally-friendly economic hub.

One can infer that Dubai's economic growth has also been fuelled by private sector participation in developing particularly trade, construction and real estate sectors. This has been the positive consequence of the government setting the stage by establishing a conducive business environment, pouring in massive infrastructure investments and enacting laws and polices that boosted business trust and confidence. Quoting *www.archive.gulfnews.com*, other salient supporting factors are supply-side factors that include the availability of labour and land for major real estate projects, the existence of efficient government services, a solid institutional framework and good mechanisms for service delivery; strong laws and regulations, excellent infrastructure, a strategic location coinciding with the rapid rise in global trade, especially in China and India, and openness to other cultures, giving Dubai a reputation as a safe and comfortable place to live and do business²⁵⁴.

According to *Dubai Strategic Plan 2015*, the factors discussed above have put Dubai's real per capita GDP at AED 114,362 (\$31,140) in 2005, with an annual average growth rate exceeding six per cent from 2000 to 2005. These days, Dubai's per capita income favourably compares with that of many developed countries such as Singapore [AED 98,555 (\$26,836)] and Hong Kong [AED 93,623 (\$25,493)]. Furthermore, economic performance at the sectoral level has been impressive, particularly with the non-oil sector playing a more prominent role in 2005 with a 95% contribution to GDP. This was mainly the result of the reduced dependence on oil as well as a deliberate policy of diversifying the economy in favour of the non-oil sectors in which both the overall business environment and sector-specific programmes played vital roles. The service sector has been the key driver of economic growth with an annual growth rate of 21 per cent since 2000, constituting AED 101.4 billion (\$27.6 billion) or 74% of Dubai's current GDP in

²⁵³ Ibid.

²⁵⁴ Impressive Gains

<http://gulfnews.com/business/general/impressive-gains-1.183467> 17.05.2009

2005.²⁵⁵ We can observe that in particular, the trade sector has experienced the highest increase in GDP share, while the contribution of the manufacturing and oil and gas sectors has decreased. The construction and real estate sectors have also exhibited share gains, primarily due to the availability of land, labour, domestic and foreign capital and favourable changes in regulations.

It can be deduced that the huge economic stimuli of Dubai is multi-sectoral and the current GDP mix is very favourable as its strongest sectors happen to be highly conducive to future global growth by international standards. These sectors are ICT, tourism, transportation, construction and financial services, which are well positioned to constitute the focal point of Dubai's future growth. Although years back, Dubai's economy was built on the back of the oil industry,²⁵⁶ currently, revenues from oil and natural gas account for 5.4% of the emirate's revenues,²⁵⁷ hence, Dubai had successfully lessened its oil dependence and diversified its economy. It is estimated that Dubai produces 240,000 barrels of oil a day and substantial quantities of gas from offshore fields and the Emirate's share in UAE's gas revenues is about 2%. However, Dubai's oil reserves have diminished significantly and are expected to be exhausted in 20 years.²⁵⁸ The diversified economic growth of Dubai is attributed to real estate and construction (22.6%),²⁵⁹ trade (16%), entrepot (15%) and financial services (11%) which are considered the largest contributors.²⁶⁰

However, many analysts have also considered the visionary leadership and strategies of the ruler of Dubai that have strategically set up specialised free zones with the public policies that supported it a pivotal factor that paves the way for the economic triumph of Dubai. Such is the establishment of the Jebel Ali Free Zone (JAFZA) in 1985, an industrial area surrounding the port that allows international companies that relocate there to enjoy the special privileges of a free zone that enjoys exemption from corporate tax for

²⁵⁵ Dubai Strategic Plan 2015. op.cit.

²⁵⁶ Dubai Overview. USA Today
<http://www.usatoday.com/marketplace/ibi/dubai.htm> 23.01.2009.

²⁵⁷ Oil Share dips in Dubai GDP
<http://www.ameinfo.com/122863.html> 08.01.2009.

²⁵⁸ Dubai- Overview. op.cit.

²⁵⁹ Dubai Diversifies Out of Oil
<http://www.ameinfo.com/66981.html> 15.12.2009.

²⁶⁰ UAE Oil and Gas
http://www.uae.gov.ae/Government/oil_gas.htm#Dubai 12.03.2009.

fifteen years, no personal income tax, no import or export duties, no restriction on currency and easy labour recruitment. With 67 berths and a size of more than 52 square miles, Jebel Ali is ranked eighth globally for the volume of container traffic it supports,²⁶¹ it is the world's largest man-made harbour and the biggest port in the Middle East. The area is home to more than 6, 000 companies from over 120 countries. The port of Jebel Ali has become the one most frequently visited by ships of the United States Navy outside the United States.

Dubai had also successfully developed as a hub for service industries such as ICT and finance with the establishment of industry-specific free zones throughout the city that include Dubai Internet City and Dubai Media City. Supervised by TECOM, the Dubai's Technology, Electronic Commerce and Media Free Zone Authority, these free zones include ICT firms such as EMC Corporation, Oracle Corporation, Microsoft and IBM, and media organisations such as MBC, CNN, BBC, Reuters and AP. Furthermore, the Dubai Financial Market (DFM) was established as a secondary market for trading securities and bonds, both local and foreign. The government's decision to diversify from a trade-based, but oil-reliant, economy to one that is service and tourism-oriented has made real estate more valuable, resulting in the property appreciations. Large-scale real estate development projects have led to the construction of some of the tallest skyscrapers and largest projects in the world such as the Emirates Towers, the Burj Dubai, the Palm Islands and the world's tallest, and most expensive, hotel, the Burj Al Arab.

4.4. The Demographics of Dubai

In 1930, when Dubai started to become a successful commercial port, its population was then nearly 20, 000 a quarter of whom were expatriates. Nowadays, the population of the Emirate, according to Dubai Statistics Centre, is 1, 529, 792 as of 2007, which included 1,164, 576 males and 365,216 females.²⁶² The male population is 76.13% while the female is 23.87%. The majority of the population is concentrated in the 15-49 years age group

²⁶¹ Dubayy. Encyclopaedia Britannica 2008
<http://concise.britannica.com/dday/print?articleId=31319&fullArticle=true&tocId=9031319> 25.02.2009.

²⁶² Population and Vitals Statistics
<http://www.dsc.gov.ae/DSC/Pages/Population%20and%20Vital%20Statistics.aspx> 27.09.2008.

with 82.1% of the total population.²⁶³ Fewer than 20% of the population of the Emirate are UAE nationals who are also popularly known as Emiratis. Approximately 85% of the expatriate population (and 71% of the emirate's total population) are Asian, chiefly Indian (51%), Pakistani (15%), Bangladeshi (10%) and others (10%).²⁶⁴ The Ministry of Labour of Dubai reported that in 2005 the total population of metropolitan Dubai was 1, 272, 000, out of which the total foreign-born population was 1, 056, 000, that is 83% of the population of metropolitan Dubai.²⁶⁵

The median age in the emirate was about 27 years. The crude birth rate, as of 2005, was 13.6%, while the crude death rate was about 1%.²⁶⁶ Arabic is the official language of Dubai although Hindi, Malayalam, Urdu, Persian, Tagalog, Bengali and other languages are widely spoken in Dubai. English is the lingua franca of the city and is widely spoken in commerce. By law, Islam is the official state religion of the UAE. The government subsidises almost 95 percent of mosques and employs all Imams; approximately 5 percent of mosques are entirely private, and several large mosques have large private endowments.²⁶⁷ Dubai has large Hindu, Christian, Buddhist, Sikh and other religious communities. Non-Muslim groups can own their own houses of worship, where they can practice their religion freely, by requesting a land grant and permission to build a compound.²⁶⁸ Non-Muslim religious groups are permitted to openly advertise group functions; however, proselytising or distributing religious literature is strictly prohibited under penalty of criminal prosecution, imprisonment and deportation for engaging in behaviour offensive to Islam²⁶⁹.

²⁶³ Ibid.

²⁶⁴ History and Background of the UAE, op.cit.

²⁶⁵ Metropolitan Dubai Area

<http://www.migrationinformation.org/dataHub/GCMM/Dubaidatasheet.pdf> 13.12.2008.

²⁶⁶ The Changing Demographics of the UAE

http://www.hsbc.ae/1/PA_1_1_24P/content/uae/pdf/eco_bull_04_eng_demo.pdf 23.12.2008.

²⁶⁷ Basic Vital Indicators – Emirate of Dubai.

<http://vgn.dm.gov.ae/DMEGOV/OSI/webreports/872729764SYB05-02-15.pdf> 08.12.2008.

²⁶⁸ Country Profile: United Arab Emirates.

<http://etd.unisa.ac.za/ETD-db/theses/available/etd-07012004-113622/unrestricted/02CHAPTER2.pdf> 23.12.2008.

²⁶⁹ Basic Vital Indicators - Emirate of Dubai. op, cit.

4.5. The Dubai Strategic Plan 2015

On 2007, the Ruler of Dubai, His Highness Sheikh Mohammed Bin Rashed Al Maktoum, who is also UAE's Prime Minister and Vice President, laid down and launched the Dubai Strategic Plan 2015, which sets out a strategic approach to develop the Emirate's dynamic economic sectors and bannered the theme "Dubai... Where the Future Begins". Citing Rahman in his article "Streamlining Growth", the Dubai Strategic Plan 2015 was prepared by 300 people comprising officials, businessmen and academicians. This plan strengthens Dubai's healthy sector mix by ensuring a focus on key sectors while further promoting diversification and a systematic integration into the regional and global economy. For a fast growing economy like Dubai, achieving growth is not an issue, as growth has been coming because of effective vision embedded in the Emirates' economic plans. What is important for an economy like Dubai is to ensure balanced growth.²⁷⁰ This is where Dubai's Strategic Plan 2015 comes into play as a crucial task of properly steering an economic course of Dubai by ensuring a balanced diet for its economy and society. The clear challenge then for Dubai is to restructure its growth in a manageable and responsible manner that sustains its growth, helps its population and has limited impact on the environment.

As cited in www.ufi.org/pages, the plan has also focused on regulation and responsibility towards its population, especially the labourers and the environment and is set to build on Dubai's remarkable economic performance through enhanced productivity and sector development. The recommended future strategic growth path in the plan has been based on six combinations of sectors that includes ICT, tourism, trade, transportation and financial services which are considered the strongest sectors and are highly conducive to future growth by international standards. These Dubai sectors of tourism, trade, transportation, and financial services were identified based on their current status, international competitiveness and the Emirate's capacity to develop them with the availability of favourable local conditions²⁷¹.

However, targeting these strongest sectors will not yield much sustainable economic thrust unless several enablers for its growth are addressed in parallel. According to Rahman in

²⁷⁰ Rahman, S. "Streamlining Growth". *Gulfnews.com*
http://archive.gulfnews.com/indepth/dubaiplan/main_story/10130966.html 28.07.2008.

²⁷¹ Dubai's Strategic Plan
<http://www.ufi.org/pages/ufievents/ucf/download/presentation-dubai08.pdf> 14.02.2009

his article “Streamlining Growth”, these factors include: first, sector focus and development which moves Dubai to a new growth path of diversification; second, productivity growth which raised the productivity of economic sectors and quality standards; third, human capital excellence which requires attracting and retaining highly skilled employees and improving the UAE nationals' qualifications; fourth, science, technology and innovation capacity building which aims to turn Dubai into a vibrant science and technology hub; fifth, cost of living and doing business management which ensures Dubai's competitiveness by managing the cost of living and doing business; sixth, quality of life improvement which aims to establish Dubai as a preferred home for citizens and residents, and helping them live healthier lives enriched with opportunities; seventh, policy and institutional framework excellence that strives for excellence in economic policy-making and deployment; and eight, laws and regulations alignment that aligns Dubai's economic laws and regulations with international best practices and standards²⁷².

4.6. The Dubai eGovernment

4.6.1. Dubai eGovernment Strategic Planning

Dubai eGovernment is a flagship programme of the Government of Dubai in its use of Information and Communication Technology (ICT) to provide information and services to the public, with a vision of easing the lives of people and businesses in relating with the government and contributing in establishing Dubai as a leading economic hub. According to www.dubai.ae/en.portal, it was launched in 2001 by the Ruler of Dubai, His Highness Sheikh Mohammed bin Rashed Al Maktoum who is also the Vice President and Prime Minister of UAE, through the official portal of Dubai eGovernment, www.dubai.ae which aims to provide online services and information for all citizens, residents, visitors, businesses and other government entities²⁷³. By integrating the eServices offered by different government departments of Dubai and available in Arabic and English, the portal carries out its tasks in collaboration with all the departments and entities that come under the government of Dubai. **Appendix no. 1** shows the English and Arabic versions of the web portal of Dubai. The portal is maintained by an IT and business development team and provides all users with comprehensive information on Dubai, the UAE, news updates

²⁷² Ibid.

²⁷³ Official eGovernment Portal of Dubai
www.dubai.ae/en.portal 13.05.2009

relevant to the Dubai government administration and economic development, and also includes essential guidelines dubbed as “How To’s” for individuals, and a range of eServices that are categorised for citizens, residents, visitors and businesses. According to www.dubai.ae/en.portal, this “How To” section of the portal provides tips and guidelines on how to accomplish vital tasks with government departments and entities which can save user’s time, effort and money and may include getting visas, obtaining driving licenses, getting national identity cards, travelling about in Dubai and other popular public eServices.²⁷⁴

In line with boosting the dissemination of its eGovernment initiatives, the Dubai government has also launched *e4all*, an official magazine of the Dubai eGovernment which is available in print and online versions. The foremost goal of the magazine which has its own website is to promote government departments’ online services as well as increase awareness of eGovernment eServices which will result in change in people’s attitude towards the way of using government services and convincing companies and individuals to adopt innovative ways of dealing with the government through ICT and the Internet. In the first issue of *e4all* on November 2003, there was a feature of a true-to-life story *Saved by the Net* that succinctly provided a picture of the vital advantages or benefits of online services. The story goes – “The horror of the accident and the impact of the shock paralysed her thoughts and left her unable to move. She could hardly contain herself when looking at her husband’s body covered in blood in the ICU. She noticed the weakened breaths of her son lying next to his father. Both were barely alive. She collapsed on the seat after they took her husband and son to intensive care, only to be brought back to reality by the voice of the receptionist asking her for the health card to complete the hospital procedures. She looked in her handbag, but did not find the card. She excused herself from the receptionist to call a relative who could bring the card. Time passed slowly while she waited for her relative to show up with the health card, which she gave to the officer as soon as it was handed to her. Then came the second blow of the day: the health card had expired and she would have to pay the full price of the treatment and hospital expenses if she could not renew the card within 24 hours! What was she going to do? All government offices were closed for the next three days. It was too much to take and she started to cry. After a while, she reached for the phone and called her cousin, who works as a nurse in one of the government hospitals. Maybe he could find a solution. She was so surprised when he informed her that renewing the health card is a very simple

²⁷⁴ Ibid.

procedure that takes only a few minutes when done through the health department website. He asked her for the name and the card number, and, a few minutes later he called to tell her that the card had been renewed. The reception officer went on with the procedures after the card was renewed, while she sat back thinking of her husband and son and what might have happened to them without this service. Her relative held her, happily saying “Thank God. Just think how much time we saved.”²⁷⁵ This story mirrors the very great advantage of having online services that saves not only time and money but lives as well. The pursuit of eGovernment transformation of Dubai is not only for the improvement of efficiency of government operations but most importantly, to respond to the needs and ease the lives of people. Quoting Sheik Mohammed, “the ultimate purpose of eGovernment initiatives is to ease the lives of people and business interacting with the government”²⁷⁶.

4.6.2. Core Management Issues for eGovernment

In 2006, Diane Milne of *IT Weekly* reported that Dubai government believed that not enough people were using its online services. Mr Salem Khamis Al Shair, eServices Director of eGovernment in a personal interview on the matter blamed problems on the lack of public awareness and public mistrust in conducting financial transactions online.²⁷⁷

Appendix no. 3 details the Transcript of the personal interview with Mr Salem Khamis Al-Shair. In 2007, in an evaluation of dubai.ae the portal of Dubai eGovernment as a centralised gateway for all government departments and services, resulted in these observations: first, poor classification where the search results were mixed and not classified, and second, the search results were not classified according to the department providing the eServices.²⁷⁸ This results in difficulty for the user who is left with the only choice being to dig deeper into the website of that department when looking for certain services.

²⁷⁵ “Saved by the Net”.
e4all. 1. 2003. 15-17.

²⁷⁶ Translation of My Vision - Challenges in the Race for Excellence
See Appendix no. 11.

²⁷⁷ Diane Milne. “E-Services Fail to Click with Public”. *IT Weekly*. January 2006.
http://www.itp.net/index.php?view=article&id=485040&Itemid=1&option=com_content 06.04.09.

²⁷⁸ “Search Tools of Government Websites – Some are Disabled, Others Lack Professional Touch”.
E4all. 49, 2007. 49, 14.

Table 7 provides the results of the evaluation of government websites in Dubai which reveals that only seven government websites out of twenty-three have search tools that covers eServices and news and have an eServices Page. Though many departments have declared that they have achieved 90% eTransformation, this does not, however, translate to eServices accessibility. A further examination of the search tools that provided government websites with help for users to address eServices yielded only media press releases, but not the contents of eServices pages.

Table 7

Results of the Evaluation of Government websites in Dubai²⁷⁹

Department Portal	Search Tool	eServices Page	Search Results
Awqaf & Minors Affairs amaf.gov.ae	Not Available	Not Available	-
Dubai Ports, Customs & Free Zone dubaitrade.ae	Not Available	Not Available	-
Dubai Courts dubaicourts.gov.ae	Not Available	Available	-
Real Estate Dept realestate-dubai.gov.ae	Not Available	Available	-
Dubai Development Board dubaidb.gov.ae	Not Available	Available	-
Department of Civil Aviation Dubaiport.com	No Results	Available	-
Roads & Transport Authority rta.ae	No Results	Available	-
Dubai Public Prosecution dxbpp.gov.ae	No Results	Available	-
Dubai Electricity & Water Authority dewa.gov.ae	No Results	Available	-
Dubai Airport Freezone Authority dafza.gov.ae	Searches release only	press Not Available	1

²⁷⁹ Ibid., p. 15

Knowledge and Human Development khda.gov.ae	Searches release only	press Not Available	4
Dubai Cultural Council dubaiculturalcouncil.ae	Searches release only	press Not Available	1
Dubai Chamber of Commerce dcci.ae	Searches release only	press Available	4
Naturalisation and Residency Administration dnrd.gov.ae	Searches release only	press Available	4
Dubai Municipality dm.gov.ae	Searches release only	press Available	18
Islamic Affairs and Charitable Activities dicd.ae	Searches release only	press Available	1
Dept. of Tourism and Commerce Marketing dubaitourism.ae	Searches and News	eServices Available	3
Dept. of Health and Medical Services dohms.gov.ae	Searches and News	eServices Available	1
Dept. of Economic Development dubaied.gov.ae	Searches and News	eServices Available	65
Dubai Police Dubai.police.gov.ae	Searches and News	eServices Available	2
Protocol & Guest House Dept. protocol.dubai.ae	Searches and News	eServices Available	23
Dubai Media Corporation Dmi.ae	Searches and News	eServices Available	1
Land Dept. dubailand.gov.ae	Searches and News	eServices Available	10

According to www.umpan1.un.org, the first study on digital governance in municipalities worldwide ranked Seoul, Hong Kong, Singapore, New York and Shanghai as the top five

cities. Dubai is 18th. This is the first research effort to evaluate digital governance in municipalities throughout the world. Their instrument for evaluating municipal web sites consists of 92 measures over five core areas: 1. security and privacy, 2. usability, 3. content, 4. services, 5. citizen participation²⁸⁰. One can note that in order for Dubai Government to further succeed in digital governance or its pursuit of E-Government it should equally embark on improvements on these key areas of privacy and security, usability, content, services and citizen participation.

4.6.3. Design of new eGovernment System

In this year 2009, the Dubai eGovernment initiatives became a government department of Dubai through a decree, *Law no. 7 of 2009*²⁸¹ issued by Sheikh Mohammed bin Rashed Al Maktoum, in his capacity as Ruler of Dubai. This department aims at contributing to the building of a knowledge community through the government sector's advancement in electronic transformation and provision of innovative eServices to the different sections of society, depending on the qualified cadres and highly developed working procedures and technological systems based on the world's best standards.

According to the decree, *Law no. 7 of 2009*, the Dubai eGovernment Department has the following tasks and powers that include: first, devising the overall strategy of the eGovernment and providing leadership, guidance and supervision of the migration process into the e-module at government levels; second, designing the framework, policies and benchmarks for IT Management and security in addition to delivering eServices and managing knowledge and human capital according to the world's international best practices; third, identifying strategic initiatives to achieve the highest level of public procedural integration, contribute to the development of the digital community and oversee, coordinate and follow up the implementation of such initiatives as required; fourth, appraising the plans and budgets of the government agencies as regards IT and eServices and making the necessary recommendations; fifth, proposing the legislation required to facilitate electronic transformation and enable the government to derive maximum benefit from modern technologies; sixth, providing information systems that are of common nature including those related to finance, procurement, contracts, stores,

²⁸⁰ Digital Governance in Municipalities Worldwide
<http://www.unpan.org/Library/MajorPublications/DigitalGovernanceinMunicipalitiesWorldwide/> 22.09.09

²⁸¹ Mohammed Issues Law for Dubai eGovernment
http://www.khaleejtimes.com/DisplayArticle08.asp?xfile=data/theuae/2009/March/theuae_13.02.2009

human resources, maintenance, project management, email and electronic correspondence services, eArchiving, ePay, portal, connection, electronic integration (Sync) and decision support systems; seventh, providing and supervising computer-based synergistic services and unified information networks in addition to maintaining the level of performance of these services and networks, and safeguarding them against internal or external hackers; eight, rolling out awareness campaigns to educate the public on the usage of the systems and eServices provided by the government by advanced means of technology; ninth, establishing a professional and institutional capacity to assist the Department in achieving its objectives in addition to preparing the schemes necessary to attract and qualify the human resources required for work in the government agencies in the field of IT and governance; and tenth, interacting with the government agencies and offering them the necessary support to enable them to derive maximum benefit from the synergistic services.²⁸²

The same decree also stipulates that a Consultative Council is assigned to the Department, which will be headed by the Director General and staffed by qualified members appointed by the Chairman of Dubai Executive Council. The Council will have the following tasks and powers, namely: first, reviewing the strategic plans and annual budgets related to IT and eServices of the government agencies and making the necessary recommendations; second, approving the structural framework, policies, and standards for the IT Division and security as well as for eServices and knowledge and human capital management; third, reviewing and sanctioning such strategic initiatives that ensure the highest level of government procedural integration and contribute to developing a digital society, and fourth, providing consultation to the Department and government agencies to expedite and make a success of the electronic transformation processes and propose the necessary procedures to eliminate flaws.

The creation of the Department of Dubai eGovernment (DDeG) proved to be valuable in the eTransformation process of Dubai that will unite efforts, stabilise systems and overcome obstacles towards a successful eGovernment. Hence, this department will stand at a crucial point of all departments and will serve as a gateway for unifying eServices and implementing globalised standard criteria. Two main government departments were merged resulting in the establishment of DDeG; the first department was eServices

²⁸² “Tasks and Responsibilities of Dubai eGovernment Department as Stipulated by its Decree”.
E4all. 66. 2009, 8.

Department which is responsible for providing the support and reinforcement to government departments, enabling them to offer their services electronically; the second is the Department of Government Information Resource Planning which is responsible for the shared internal systems and government communication between departments.

According to Ahmed bin Humaidan, Director General of DDeG, the department will devise the general strategy to fulfil its part of the Dubai Strategic Plan by uniting efforts, enhancing partnership, providing leadership and direction, and overseeing the eTransformation processes of government entities.²⁸³ He also explained that the Emirate of Dubai implements an approach that can be characterised as balanced between “centralisation” and “decentralisation” and that he will continue to create a balance between the two approaches: centralising systems, and decentralising authorisation.²⁸⁴ This means that the department’s hardware, network, services and shared systems are centralised in hosting and deployment to departments. However, the authorisation for transforming services online will be in the hands of departments according to set plans and customers’ demands. Services will be developed at par with world standards and regulations to achieve higher levels of customer satisfaction.

4.6.4. The eProcurement of Dubai and Tejari.com

In 2000, Dubai Government founded Tejari which has the mission to promote trade and E-Procurement for Dubai and create an efficient, open and transparent procurement platform where buyers and sellers can meet Dubai companies. It first started as a provider of online procurement services to the government of Dubai, then expanded into the private sector, and spread out across the Middle East. The mission statement of Tejari is “to maximise the business potential of our customers in the Middle East by providing them with innovative online B2B services, enabling them to extend their reach and enhance their competitive standing”²⁸⁵. The brand name for the company, Tejari, was decided upon because it derives from the Arabic word *tejarah* meaning trade, thus creating a regional identity through a name that could be pronounced globally. Tejari was located in Dubai Internet

²⁸³ “Ahmed bin Humaidan, Director General of DDeG: The Next Stage Will Focus on Optimum Use of Resources and Innovation in eServices”. *e4all*. 66. 2009, 3.

²⁸⁴ Ibid, 4.

²⁸⁵ Tejari Home Page
<http://www.tejari.com/Tejari/Pages/default.aspx> 13.06.2009

City with 15 employees²⁸⁶. As cited in *www.menafn.com*, Tejari in its role as a regional pioneer electronic procurement has facilitated tenders valued at over \$1.8 billion (Dh 6.6 billion in its first five years of operation and provided a secured, affordable route to market for more than 3,500 trading partners who have negotiated more than 35, 000 online tenders.²⁸⁷

Tejari is the leading B2B online marketplace in the emerging markets enabling buyers and sellers to transact and share information about a variety of goods and services via a secured Internet environment. Tejari provides a single point of contact for an open and growing community of buyers and suppliers, permitting spot-purchasing and online auctions that enable participants' real-time access to new markets and greater cost savings. Having offices in 15 countries, from the Middle East to North Africa, and South Asia as well as in China, where it has ten offices and 100 people, the initial missions of Tejari have been fulfilled from its start as a Ruler's Court of fourteen government departments; it now has 190,000 businesses as members from across the globe.

In the beginning, businesses were reluctant to do e-commerce with Tejari and there were technological infrastructure and legal challenges. These have been slowly mitigated over time as Internet penetration in Dubai has increased and more companies have developed their technological infrastructures. The Tejari Portal promotes a very open and transparent environment for E-Procurement where every transaction is recorded, from tender specifications to buyers bids. This has been a strong anti-corruption tool that most Dubai government departments have embraced. According to Nadia Saleem in her article "Online Business is Transparent", the Dubai Health Authority has almost all of its procurement done online, while the Road and Transport Authority has successfully bid for a Dh1.9 billion auction online.²⁸⁸

Laws and regulations to support eProcurement system of Dubai have been introduced to allow for e-auctions, e-bidding processes and the legal requirements for identification of bidders and suppliers. In 2002, the Emirate of Dubai passed the Electronic Transactions

²⁸⁶ Kemp, Linzi. Tejari.com, The Middle East Online Market Place under the leadership of Sheika Lubna Al Qasimi. *International Journal of Leadership Studies*. 4: 1.2008, 22-37.

²⁸⁷ Tejari, a regional pioneer in e-business and electronic communications has facilitated tenders valued at over \$ 1.8 billion . http://www.menafn.com/qn_news_story_s.asp?storyid=96522 09.08.2009.

²⁸⁸ Saleem, Nadia. "Online Business is Transparent". <http://www.gulfnews.com/business/General/10240958.html> 18.07.09

and Commerce Law that covers electronic transactions for the Emirate of Dubai and mandates government agencies in Dubai to use the tejari.com eProcurement system. Referring to www.ibls.com, this law has also been created to attain the following objectives:

- Facilitate Electronic Communication by means of reliable Electronic records
- Facilitate and eliminate any barriers to Electronic Commerce and other electronic Transactions which may result from uncertainties over writing and signature requirements, and promote the development of the legal and business infrastructure necessary to implement secure Electronic Commerce
- Facilitate the transmission of electronic documents to government agencies and corporations, and promote efficient delivery of services by means of reliable electronic communications
- Minimise incidences of forgery related to Electronic communications
- Establish uniform rules, regulations and standards with regard to authentication and integrity of electronic communications
- Promote public confidence in the integrity and validity of electronic transactions, communications and records
- Enhance the development of electronic commerce and other transactions on the national and international level through the use of electronic signatures.²⁸⁹

According to a research *Good Governance in Development in Arab Countries*, the top barriers or inhibitors in the implementation of an E-Procurement system are lack of awareness and lack of suppliers and buyers. Other barriers include the ROI of new technology that facilitates e-commerce, change management of traditional purchasing practices and willingness of both buyers and suppliers to switch to online suppliers.²⁹⁰ The government of Dubai has both a decentralised and centralised approach to eProcurement; it decentralised its procurement system when it delegated authority to purchase based on the amount for various government entities; however, it also pursued a centralised approach to establish a common ASP model for eProcurement that can serve all government entities, for lower cost of development and implementation by having a single

²⁸⁹ Electronic Transaction Under the Law of Dubai
www.ibls.com/members/docview.aspx?doc=1461 19.08.09

²⁹⁰ Good Governance in Development in Arab Countries
<http://www.oecd.org/dataoecd/37/13/36090344.pdf> 23.06.09.

application, for less costly hosting and data mining, and easier to implement united standards and quality.

The introduction of Tejari as a comprehensive and integrated eProcurement system has greatly reduced the time needed to reach the market place as all processes in procurement are now simplified and fully automated. According to *Good Governance in Development of Arab Countries*, the Armed Forces of Dubai and UAE have used the Tejari eProcurement system and has achieved 40% savings with their firefighting equipment and 14% savings for IT hardware through structured online comparisons and negotiations, with more transparency, shorter cycle time and new sources of supplies into the bargain .²⁹¹

4.6.5. Dubai Excellence Programme

Sheikh Mohammed Bin Rashed Al Maktoum as the Dubai's Crown Prince and UAE Minister of Defence launched in 1988 a comprehensive and ambitious improvement programme – the Dubai Government Excellence Programme (DGEP). According to www.dqg.org, Sheikh Mohammed wanted to pursue a vision of attaining levels of excellence in government performance in Dubai.²⁹² It is, however, construed that the focus of the programme would not only be on improving the management of government departments, but would also provide rewards to departments, teams and individuals based on their contribution to the improvement of government services. In this way, departments are encouraged to fix clearly defined and well communicated objectives, with measurement systems and public reporting of the results, which is centrally anchored on their interaction with and improved satisfaction of their customers.

Through this programme, the Dubai government has demonstrated its zeal to improve the performance of its public sector and enhance its capacity to implement modern administrative principles which are based on pillars of customer satisfaction, resource development, procedure simplification, systems documentation, creativity encouragement and capability development. We can infer that the leadership of Dubai government seeks to develop the government sector and improve its performance through moral incentives, motivational working environment, constructive cooperation and positive competition.

²⁹¹ Ibid.

²⁹² Dubai Quality Group
www.dqg.org/pressroomdetails.php?name=0000000013 12.08.2009

According to www.dubaixcellence.com, the DGEP seeks to achieve the following objectives, namely:

1. To achieve a quantum leap in the performance of government departments and bodies by providing a set of best practices allowing them to conduct self-assessment activities.
2. To develop the government sector and improve its performance through the provision of moral incentives and the establishment of a motivating working environment that promotes constructive cooperation and positive competition.
3. To support development programmes within government departments and bodies, improve productivity, enhance efficiency, rationalise expenditure and ensure commitment to excellence in service.
4. To promote the principles of excellence, creativity and quality, install the best administrative and professional practices and implement the most advanced and effective working methods.
5. To underline the role of the government sector in steering and supporting comprehensive development plans as well as its role in establishing a modern motivating working climate, promoting high levels of performance in all areas, servicing the business community and supporting the private sector.
6. To provide a guiding reference through principles and assessment criteria for the level of performance and progress within Dubai government departments and bodies.
7. To ensure full commitment of government sector to fulfil its tasks and obligations with the highest level of quality, efficiency, and professionalism.
8. To express Dubai's appreciation and recognition to government departments and bodies achieving excellence in performance, productivity, services, projects, programmes, plans and working methods.
9. To motivate government employees of all ranks, with the purpose of promoting creativity, excellence, commitment, know how, customer support and performance.²⁹³

²⁹³ Dubai Government Excellence Program
<http://www.dubaixcellence.com> 13.10.2009.

The Dubai Government had so seriously regarded the excellence programme that it had set about learning best practices in business excellence from around the world. According to www.dihrd.ae, the DGEP is based on the EFQM Excellence Model which is a framework for organisational management systems, promoted by the European Foundation for Quality Management (EFQM) and designed for helping organisations in their drive towards being more competitive²⁹⁴. It is widely recognised that organisations need to establish an appropriate management system to be successful. The EFQM Excellence model serves as a practical tool to help organisations clear the path to excellence, by helping them understand the gaps and stimulating solutions to problems of quality performance and productivity.

According to www.efqm.org, the model can be used in four ways:

As a framework which organisations can use to develop their vision and goals for the future in a tangible, measurable way

As a framework which organisations can use to identify and understand the systemic nature of their business, the key linkages and cause and effect relationships

As the basis for an excellence award

As a diagnostic tool for self-assessment through which an organisation is better able to balance its priorities, allocate resources and generate realistic business plans.²⁹⁵

The EFQM Excellence Model is a non-prescriptive framework and is based on the premise that excellent results with respect to performance, customers, people and society are achieved through leadership driving policy and strategy, that is delivered through people partnerships and resources and processes. The DGEP offers both moral and financial awards to government departments and divisions as well as to government employees fulfilling a specific set of assessment criteria. As cited in www.dubaiexcellence.com, the awards in DGEP by 2009 were generally categorised into administrative excellence and employee excellence.²⁹⁶ The Administrative Excellence awards include Distinguished Government Department–Gold Category, Distinguished Government Department, Distinguished Government Division, Distinguished E-

²⁹⁴ Dubai Institute for Human Resource Development
<http://dihrd.ae/demo/English/partners.asp> 14.09.09

²⁹⁵ EFQM Share That Works
<http://ww1.efqm.org/en/> 16.08.09

²⁹⁶ Categories – Dubai Government Excellence Program
http://www.dubaiexcellence.com/English/awards_categories.htm 14.08.09

Government Department, Distinguished Team, Distinguished Government Initiative, and Distinguished Technical Project while Employee Excellence awards include Distinguished Government Employee and Distinguished Administrative Employee.

Of particular importance in motivating the efforts of eGovernment initiatives in Dubai government departments were the two Administrative Excellence awards, namely: Distinguished Government Department–Gold Category and Distinguished E-Government Department. The Distinguished Government Department-Gold Category is an award given to Government departments which won the Distinguished Government Department Award in previous years. As the study focuses on transformation of Dubai towards eGovernment, the researcher has examined among the criteria in this award the emphasis on management of technical resources and information and knowledge management.

The requirement of management of technical resources is that it should include development and deepening of the strategy for management of technical resources to support the policy and strategy department, to develop a methodology for evaluation of technical resources, the optimal use of technical resources, including systematic replacement of old technologies, creation of modern technologies, techniques to support the development efforts and continuous improvement. On the other hand, the criterion on information and knowledge management includes development and implementation of a strategy for managing information and knowledge, to support policy and strategy department; it also includes compilation, classification and management of information and knowledge to support the implementation of policy and strategy department, to facilitate access to information and knowledge (relevant) to those concerned within the department or outside, to ensure novelty, accuracy and comprehensiveness, integration and security of information and knowledge, to make the most of knowledge and information, and increased creativity and innovative thinking in the department through the optimal use of information resources.

Most relevant and significant to efforts of eGovernment of Dubai is the second award known as the Distinguished E-Government Department. This award refers to government

departments and bodies conducting daily work, making contacts and providing services through the Internet. There are three major criteria in this award. The first is the development and management of contents on the Internet, the second is the development and management of electronic services and the third is the development and management of information security.

The development and management of contents on the Internet as the first criterion refers to the observance of internationally recognised standards when developing and managing Web pages. According to *www.dubaiexcellence.com*, this includes the following sub-criteria:

- Understanding and focusing on users needs while designing the Web site. This includes the following points:
 1. the design assumptions, including the ease of access regardless of the platform that in addition to taking into account requirements of people with special needs;
 2. Web site design including home page design, structure, navigation and search option capabilities;
 3. Web pages design including clarity of the pages, response time, loading time as well as the extent of the interdependence linkage of each page
 4. Contents design including writing and clarify the headlines and the use of multimedia (sound, graphics, video, etc.

- Degree of cooperation and coordination with Dubai eGovernment in the design of the site. This includes following points:
 1. the extent of cooperation in the planning and Web site design (look and feel)
 2. the extent of coordination in the selection of terms for the site (terminology).

- Contents dissemination methodology. This includes following points:
 1. the ability to update the contents to reflect the current reality
 2. the ability of the contents on helping to achieve objectives.

- Web site contents quality control methodology. This includes following points:
 1. the method used to check the spelling, grammar and translation,
 2. the method used to assess the quality of contents,

3. the method used to assess the process of displaying the contents²⁹⁷.

The second criterion, the development and management of electronic services, refers to the added-value that eServices provide to the department and its services provided to customers that also includes the methodology applied to development and provision of the of electronic services. Citing *www.dubaiexcellence.com*, its sub-criteria provide for the following:

2. 1. The extent of contribution of eServices to facilitate ease of use of government services to customers. This includes following points:

2.1.1. The degree of availability and accessibility at any time.

2.1.2. Provision of multiple electronic channels to provide e-services.

2.1.3. Easy and comprehensive registration / participation in the e-services.

2.1.4. The comprehensiveness of electronic services provided and integration with other government departments.

2.1.5. The role of eServices to simplify customer procedures

2.1.6. Percentage of transactions completed electronically.

2.1.7. The role of eServices to improve the communication channels with customers.

2.1.8. The role of eServices to ensure the accuracy and quality of services provided to customers.

eServices contribution to boost government department performance circuit. This includes the following points:

2.2.1. Government department policies in deploying and diffusion of electronic services in various levels.

2.2.2. The role of electronic services to simplify internal procedures.

2.2.3. The role of eServices to stimulate communication within the department.

2.2.4. The role of eServices in reducing paper work.

2.2.5. The percentage of transactions completed electronically.

The steps involved in the development and maintenance and documentation of electronic services. This includes the following points:

2.3.1. The comprehensiveness of service analysis and study of priority in their development.

²⁹⁷ Ibid.

2.3.2. The degree of professionalism and excellence in the development and implementation of electronic services.

2.3.3. The degree of adoption of the circle on its qualified personnel in the development and maintenance and support systems.

2.3.4. Methodology for the development and maintenance and documentation services.

2.3.5. The costs of the development of electronic services.

2.3.6. The methods used to advertise services and training on how to use. - Promote a culture of the Internet in society.

2.4. Methodology applied to assess the quality of electronic services. This includes the following points:

2.4.1. The results and objectives achieved against objectives pursued.

2.4.2. Means for measuring the satisfaction of the employees in the circle on the performance of electronic services.

2.4.3. The methods used to ensure continuity of service without interruption.

2.4.4. Measuring the performance and effectiveness of electronic services²⁹⁸.

The third and last criterion in the award for the Distinguished eGovernment Department is the development and management of information security which refers to the nature of the standard procedures and precautions taken to ensure the security of electronic services. According to www.dubaiexcellence.com, this includes the following sub criteria:

3. 1. The applied and documented information security policy. It includes the following points:

3.1.1. There is documented information security policy and implemented and the extent of coverage and updated.

3.1.2. The methodology used in the application of information security policy.

3.1.4. Who is responsible for documenting and implementation and monitoring of information security policy.

3.1.5. The extent to which one applied in the development of global information security policy .

3.2. The application of initiatives / outreach programmes to reduce the risk of security incidents and how to protect them and deal with it. This includes the following points:

²⁹⁸ Ibid.

3.2.1. The method of spreading awareness among staff to the risk of information security incidents.

3.2.2. The beneficiaries of the programme.

3.2.3. Incentives granted to staff who are committed to awareness programmes.

3.2.4. Who is responsible to follow up on this activity? Standards and policies established by the Department to overcome the negative effects of the Internet.

3.3. Over the Service's ability to assess the damage resulting from incidents of information security and to identify the source of these irregularities. This includes the following points:

3.3.1. The classification of information and electronic services according to their importance and sensitivity.

3.3.2. The methodology used to compile the information and electronic services²⁹⁹.

4.7. Presentation and Analysis of Data

This section provides the presentation and analysis of data gleaned from the questionnaire-surveys empirically tested and floated to the selected respondents of the study.

4.7.1. Presentation and Analysis of Data on Citizens/ Customers

4.7.1.1. General Information on Customers/Citizens

Table 8 shows the general information on citizens/ customers surveyed. Upon analysis, three hundred and thirty five (335) or 67% are male while one hundred and sixty five (165) or 33% are female. The population of Dubai is a mix of races, predominantly expatriates. Two hundred and seventy five (275) or 55 % of the Dubai's population are Asians, sixty five (65) or 13% are from other Arab Countries, sixty (60) or 12% are Europeans while forty two (42) or 8.4% are Africans. UAE nationals only comprise fifty eight (58) or 11.6%.

On the age of customers/citizens, three hundred eight (308) or 61.6% belong to age group 26-35, one hundred and twenty one (121) or 24.2% are 36-45, forty seven (47) or 9.4%

²⁹⁹ Ibid.

are 18-25, while twenty four (24) or 4.8 are 46-60. On education, three hundred and forty three (343) or 68.6% have bachelor degrees, one hundred and twelve (112) or 22.4% have masters or doctoral degrees, twenty seven (27) or 5.4% are undergraduates and eighteen (18) or 3.6% finished only secondary school.

Table 8
General Information on Citizens/Customers

Gender	Freq.	%
Male	335	67
Female	165	33
Nationality	Freq.	%
UAE	58	11.6
Arab Countries	65	13
European	60	12
Asian	275	55
African	42	8.4
Others		
Age Bracket	Freq.	%
Below 18		
18-25	47	9.4
26-35	308	61.6
36-45	121	24.2
46-60	24	4.8
Education	Freq.	%
Illiterate		
Literate		
Secondary School	18	3.6
Undergraduate	27	5.4
Graduate	343	68.6
Post Graduate	112	22.4

4.7.1.2. Experience of eServices/eGovernment

Table 9 presents the experiences of eServices/ eGovernment by the citizens and/or customers. Upon analysis, four hundred and forty six (446) or 89.2% have availed themselves or use eServices/ eGovernment of Dubai while fifty four (54) or 10.8 % have not. The same four hundred and forty six (446) or 89.2% have accessed published information or search information or disseminate information while fifty four (54) or 10.8 % have not. Four hundred and nine (409) or 81.8 % have filled up forms online or email feedback and/or participate in online forums and bulletin boards while ninety one (91) or 18. 2% have not. Three hundred eighty three (383) or 76.6% have made ePayments or eProcurements or eRegistrations while one hundred and seventeen (117) or 23.4% have not. It is surprising, however, that only one hundred and ninety two (192) or 38. 4% have felt a personalisation/customisation of e-services while three hundred eight (308) or 61. 6% expressed the view that not much effort has gone into the personalisation or customisation of e-services. In 2001, this researcher chanced upon a painting that presages the role of ICT and E-Government in the ethos of community living in Dubai. **Appendix no. 4** shows this fascinating painting.

Table 9
Experience of eServices/eGovernment by Customers/Citizens

1. Have you availed or use eService/eGovernment of Dubai?	Freq.	%
Yes	446	89.2
No	54	10.8
1.1 Access published information or search information or disseminate information	Freq.	%
Yes	446	89.2
No	54	10.8
1.2 Fill up forms on-line or email feedback and inquiries or participate in online forums and bulletin boards	Freq.	%
Yes	409	81.8
No	91	18.2
1.3 Made ePayments or eProcurements or eRegistrations	Freq.	%
Yes	383	76.6
No	117	23.4
1.4 . Have personalisation/customisation of eServices or Web services	Freq.	%
Yes	192	38.4
No	308	61.6

4.7.1.3. Perceived Usefulness by Customers/Citizens

Table 10 illustrates the perceived usefulness of eGovernment by citizens/ customers. Upon analysis, the respondents find it **very useful** the “reduction of fraud and corruption”, “time saving of public servants”, “more flexible working hours” “less redundancy through integrated services” and “reduction of user time” with weighted means of 4.32, 4.28, 4.37, 4.36 and 4.37 respectively. Furthermore, “reductions of travel costs, and road

congestion”, “reduction of needed physical presence”, “reduction of error-rates, rework, and complaints”, reduction of the need for multiple collections from the customer”, “more accurate, up-to-date and reliable data and information” “improve security- no security braches, and “transparency of processes and transactions” are **useful** with weighted means of 3.85, 3.99, 3.68, 3.65, 4.16, 4.10, 3.90 and 4.09 respectively. Lastly, the “reduction of processing time of transactions” and “price reductions of services” are **moderately useful** with weighted means of 3.32 and 3.19 respectively. Perceived benefits seem to be a key factor in explaining the intensity of online civic engagement. This validates the relevance of the technology acceptance model. According to the study of Chen and Dimitrova entitled *Civic Engagement via E-Government Portals: Information, Transactions and Policy Making*, the perceived availability of E-Government services seemed to encourage citizens to interact with government online.³⁰⁰

Table 10

1.1. Perceived Usefulness by Customers/Citizens

Indicators	VU	U	MU	LU	NU	Weighted Mean	DR
1.1.1. Reduction of fraud and corruption.	241	192	54	13		4.32	VU
1.1.2. Reduction of travel costs, and road congestion	103	238	143	14	2	3.85	U
1.1.3. Reduction of needed physical presence.	226	120	89	57	8	3.99	U
1.1.4. Reduction of processing time of transactions.	125	114	190	66	5	3.32	MU
1.1.5. Time saving of public	237	181	69	13		4.28	VU

³⁰⁰ Chen, Yu-Chen and Dimitrova, Daniela. “Civic Engagement via E-Government Portals: Information, Transactions and Policy Making”. Ed., Donald Norris. *E-Government Research: Policy and Management*. (US : IGI Publishing, 2008) 225.

servants.							
1.1.6. Reduction of error-rates, rework and complaints	116	121	251	12		3.68	U
1.1.7. Reduction of the need for multiple collections from single customer.	108	118	261	13	4	3.65	U
1.1.8. More flexible working hours	261	183	40	16		4.37	VU
1.1.9. More accurate, up-to-date and reliable data and information.	236	139	98	24	3	4.16	U
1.1.10. Greater information sharing across government.	198	175	109	18		4.10	U
1.1.11. Improve security – no security breaches	155	183	125	31	6	3.90	U
1.1.12. Less redundancy through integrated services	279	174	30	17		4.36	VU
1.1.13. Price reduction of service charges	96	100	123	168	13	3.19	MU
1.1.14. Reduction of user time (hours saved)	281	148	48	23		4.37	VU
1.1.15. Transparency of processes and transactions	204	166	102	28		4.09	U
Overall Weighted Mean						3.98	U

Legend: 4.21 – 5.00 Very Useful (VU) 1.81 – 2.60 Less Useful (LU)
 3.41 - 4.20 Useful (U) 1.00 – 1.81 Not Useful at all
(NU)
 2.61-3.40 Moderately Useful (MU)

4.7.1.4. Perceived Ease of Use by Customers/Citizens

Table 11 depicts the perceived ease of use by customers and citizens. Upon analysis, the “24/7 service delivery in multi channels” is rated highly with 4.25, descriptively rated as

very easy to use. On the other hand, “appropriateness of vocabulary language, “correctness of grammar and spelling” clarity and appropriateness of text on font, sizes , and readability”, “mobility of the user in the site, “consistency of style throughout, “functionality of the links” and “appropriateness of illustrations” are **easy to use** with weighted means of 3.64, 4.05, 3.94, 3.69, 4.01, 4.04 and 3.12 respectively. Lastly, “the sufficiency of overall content” “easiness of overall navigation”, pleasantness of overall look”, “orderliness of the organisation of the contents”, “accuracy and sufficiency of information “ and ”customer interface and usability” and timeliness of information” are **moderately easy to use** with weighted means of 2.95, 2.96, 3.29, 3.31, 3.14, 2.88 and 4.01. The overall weighted mean of perceived ease of use by customers/ citizens is 3.55 as **easy to use.**

Table 11
1.2. Perceived Ease of Use by Customers/Citizens

Indicators	VU	U	MU	LU	NU	Weighted Mean	DR
1.2.1. Sufficiency of overall content and directory	74	90	125	162	49	2.95	ME
1.2.2. Easiness of overall navigation.	68	83	138	185	26	2.96	ME
1.2.3. Pleasantness of the overall look.	86	108	189	103	14	3.29	ME
1.2.4. Appropriateness of vocabulary/ language	104	187	143	57	9	3.64	E
1.2.5. Correctness of grammar and spelling.	165	197	136	2		4.05	E
1.2.6. Clarity and appropriateness of text on font, sizes and readability.	147	185	161	6	1	3.94	E
1.2.7. Orderliness of organisation of the contents	96	118	146	126	14	3.31	ME
1.2.8. Accuracy and sufficiency of information.	97	102	139	101	91	3.14	ME
1.2.9. Mobility of the user in the site	143	155	127	56	19	3.69	E
1.2.10 Consistency of style throughout.	193	142	148	12	5	4.01	E
1.2.11. Functionality of links.	205	131	146	15	3	4.04	E
Customer interface and usability	64	108	112	138	78	2.88	ME
1.2.13. 24/7 service delivery in multi-channels	224	179	95	2		4.25	VE

1.2.14. Timeliness of Information	163	197	126	11	3	4.01	ME
1.2.15. Appropriateness of Illustrations.	69	129	128	145	29	3.12	E
Overall Weighted Mean						3.55	E

Legend: 4.21 – 5.00 Very Easy to Use (VE) 1.81 – 2.60 Less Easy to Use (LE)
3.41 - 4.20 Easy to Use (E) 1.00 – 1.81 Not Easy to Use at all (NE)
2.61-3.40 Moderately Easy to Use (ME)

4.7.1.5. Level of Completion of eGovernment according to Customers/Citizens

Table 12 presents the level of completion of eGovernment of Dubai according to customers/citizens. Upon analysis, the indicator that the “website/ portal allows an exchange of value as government agencies interact directly with clients on-line, including recording, and storing sensitive information” has the highest weighted mean with 4.28 descriptively rated as **wholly completed**. On the other hand, the “website portal provides accurate, up-to-date, and relevant information to customers” and “website portal allows information queries and forms to be completed on-line on government services are **largely completed** with weighted means of 3.94, and 4.10. Lastly, “website portal integrates government services based on needs and functions and not on departments or agencies” is **half completed with a weighted mean of 3.34**. Overall, the completion of eGovernment of Dubai according to customers/citizens is **largely completed** with a weighted mean of 3.91.

Table 12**Level of Completion of eGovernment according to Customers/Citizens**

Indicators	WC	LC	HC	FC	NC	Weighted Mean	DR
2.1.1. Website/portal provides accurate, up-to-date, and relevant information to customers.	139	237	83	41		3.94	LC
2.1.2. Website/ portal allows informational queries and forms to be completed on-line on government services.	227	126	121	26		4.10	LC
2.1.3. Website/portal allows an exchange of value as government agencies interact directly with clients on-line, including recording, and storing sensitive information.	206	231	63			4.28	WC
2.1.4. Website/ portal integrates government services based on needs and functions, and not on departments or agencies.	73	125	205	97		3.34	HC
Overall Weighted Mean						3.91	LC

Legend: 4.21-5.00 Wholly Completed (WC)
(FC)

3.41-4.20 Largely Completed (LC)

1.81 – 2.60 Few Completed

2.61-3.40 Half Completed (HC)

1.81 – 2.60 Few Completed

1.00 – 1.81 Not any initiative

4.7.1.6. Level of Acceptance of eGovernment according to Customers/Citizens

Table 13 renders the level of acceptance of eGovernment according to customer/ citizens. Upon analysis, the indicators that the “website/ portal allows an informational queries and forms to be completed online on government services”, “website/ portal allows an exchange of value as government agencies interact with clients online, including recording, and storing sensitive information”, “website/ portal integrates government services based on needs and functions, and not on departments or agencies” are **very much accepted** with weighted means of 4.35, 4.36 and 4.23 respectively. However, the “website/portal provides accurate, up-to-date, and relevant information to customers” are **accepted** with a mean of 4.16. Overall, the level of acceptance of eGovernment according to Customers/ citizens is **very much accepted** with a weighted mean of 4.27.

Table 13
Level of Acceptance of eGovernment according to Customers/Citizens

Indicators	VA	A	MA	SA	NA	Weighted Mean	DR
2.1.1. Website/portal provides accurate, up-to-date, and relevant information to customers.	195	221	53	31		4.16	A
2.1.2. Website/ portal allows informational queries and forms to be completed on-line on government services.	238	203	59			4.35	VA
2.1.3. Website/portal allows an exchange of value as government agencies interact directly with clients on-line, including recording, and storing sensitive information.	269	161	53	17		4.36	VA
2.1.4. Website/ portal integrates government services based on needs and functions, and not on departments or agencies.	219	189	80	12		4.23	VA
Overall Weighted Mean						4.27	VA

Legend: 4.21-5.00 Very Much Accepted (VA) 1.81 – 2.60 Slightly Accepted (SA)
3.41-4.20 Accepted (A) 1.00 – 1.81 Not accepted at all (NA)
2.61-3.40 Moderately Accepted (MA)

4.7.1.7. Factors/Challenges towards a Successful Transformation of eGovernment by Customers/Citizens

Table 14 exposes the factors/ challenges towards a successful transformation of eGovernment by customers/ citizens. Upon analysis, the indicators “ICT infrastructure”, “Human Capital Development”, “Leadership Role” are **very important** with weighted means of 4.47, 4.24 and 4.29 respectively. On the other hand, indicators like “Policy Issues”, Change Management”, Partnership and Collaboration”, “Strategy” are considered **important** with weighted means of 4.10. 4.03, 3.98 and 4.15 respectively. Overall, the factors/ challenges towards a successful transformation of eGovernment by Customers /citizens are **important** with a weighted mean of 4.18.

Table 14
Factors/Challenges towards a Successful Transformation of eGovernment
by Customers/Citizens

Indicators	VI	I	MI	SI	NI	Weighted Mean	DR
4.1. ICT infrastructure (eReadiness, telecommunication equipment)	291	155	54			4.47	VI
4.2. Policy issues (legislation)	223	136	110	31		4.10	I
4.3. Human Capital Development (skills, education ,learning)	251	122	98	29		4.24	VI
4.4. Change management (culture, resistance to change)	207	115	165	13		4.03	I

4.5. Partnership and collaboration (public/private partnership, community and network creation)	195	111	185	9		3.98	I
4.6. Strategy (vision, mission)	240	137	83	40		4.15	I
4.7. Leadership role (motivate, involve, influence, support)	263	131	97	9		4.29	VI
Overall Weighted Mean						4.18	I

Legend: 4.21 – 5.00 Very Important (VI) 1.81 – 2.60 Slightly Important (SI)
3.41 - 4.20 Important (I) 1.00 – 1.81 Not Important at all (NI)
2.61-3.40 Moderately Important (MI)

4.7.1.8. Impact/ Opportunities of eGovernment towards the Development of Dubai by Customers/Citizens

Table 15 shows the impact/ opportunities of eGovernment towards the development of Dubai by customers/ citizens. Upon analysis, the indicator “promote the use of ICT in other sectors of the society” is **very significant** with the highest weighted mean of 4.26. The “efficiency gains”, “quality of service delivery to clients” “transparency, anticorruption, accountability” , “increase the capacity of government”, “network and community creation”, “improve the quality of decision making” is **significant** with weighted means of 3.61, 4.44, 3.93, 4.06 4.13, and 3.96 respectively. It is strongly noted, however that “cost reduction” is **slightly significant** with the least weighted mean of 2.31. Overall, the impact/ opportunities of eGovernment towards the development of Dubai by customers/ citizens are **significant** with an overall weighted mean of 3.71.

Table 15
Impact/ Opportunities of eGovernment towards the Development of Dubai
by Customers/Citizens

Indicators	VS	S	MS	SS	NS	Weighted Mean	DR
5.1. Cost reduction	39	61	85	148	167	2.31	SS
5.2. Efficiency gains	131	153	109	107		3.61	S
5.3. Quality of service delivery to clients	123	118	131	113	15	3.44	S
5.4. Transparency, anticorruption, accountability	196	152	76	76		3.93	S
5.5. Increase the capacity of government	216	136	113	35		4.06	S
5.6. Network and community creation	208	161	119	12		4.13	S
5.7. Improve the quality of decision making	193	129	145	33		3.96	S
5.8. Promote use of ICT in other sectors of the society	243	161	81	15		4.26	VS
Overall Weighted Mean						3.71	S

Legend: 4.21 – 5.00 Very Significant (VS)
Significant (SS)

3.41 - 4.20 Significant (S)

all (NS)

2.61-3.40 Moderately Significant (MS)

1.81 – 2.60 Slightly

1.00 – 1.81 Not Significant at

4.7.2. Presentation and Analysis of Data on Business Employees

4.7.2.1. General Information on Business Employees

Table 16 exhibits the general information on business employees surveyed. Upon analysis, along gender, three hundred and eleven (311) or 62.2% are male while nine hundred and eighty nine (189) or 37.8% are female. The populace of business sector of Dubai is a blend of world ethnicities that are predominantly expatriates. Two hundred and twenty (220) or 44% of Dubai's population are Asians, eighty two (82) or 16.4% belong to Arab countries, seventy four (74) or 14.8% are Europeans, and sixty two(62) or 12.4% are Africans. Only sixty two (62) or 12.4% are UAE nationals. On age, two hundred sixty four (264) or 52.8% belong to the age group 26-35, one hundred and thirty one (131) or 26.2% are 36-45, eighty three (83) or 16.6% are 18-25, while twenty two (22) or 4.4% are in 46-60. On education, two hundred and eighty seven (287) or 57.4% have bachelor degrees or graduates, one hundred and thirty six (136) or 27.2% have masters or doctoral degrees, seventy seven are undergraduates (77) or 15.4% are undergraduates.

Table 16
General Information on Business Employees

Gender	Freq.	%
Male	311	62.2
Female	189	37.8
Nationality	Freq.	%
UAE	62	12.4
Arab Countries	82	16.4
European	74	14.8
Asian	220	44
African	62	12.4
Others		
Age Bracket	Freq.	%
Below 18		
18-25	83	16.6

26-35	264	52.8
36-45	131	26.2
46-60	22	4.4
Education		
Illiterate		
Literate		
Secondary School		
Undergraduate	77	15.4
Graduate	287	57.4
Post Graduate	136	27.2

4.7.2.2. Experience of eServices/eGovernment by Business Employees

Table 17 illustrates the experiences of eServices/ eGovernment by the business employees. Upon analysis, four hundred and seventy three (473) or 94.6% have availed themselves of or use eServices/ eGovernment of Dubai while twenty seven (27) or 5.4 % have not. Likewise, four hundred and seventy three (473) or 94.6% have accessed published information or search information or disseminate information while twenty seven (27) or 5.4 % have not. Four hundred and forty one (441) or 88.2 % have filled up forms on line or email feedback and inquiries or participate in online forums and bulletin boards while fifty nine (59) or 11.8% have not. Three hundred ninety seven (397) or 79.4% have made ePayments or eProcurements or eRegistrations while one hundred and three (103) or 20.6% have not made online payments, registrations or procurements. Lastly, two hundred and six (206) or 41.2% have felt a personalisation/ customisation of e-services while two hundred ninety four (294) or 58.8% expressed the view that not much effort had gone into the personalisation or customisation of e-services.

Table 17
Experience of eServices/eGovernment by Business Employees

1. Have you availed or use eService/eGovernment of Dubai?	Freq.	%
Yes	473	94.6
No	27	5.4
1.1 Access published information or search information or disseminate information	Freq.	%
Yes	473	94.6
No	27	5.4
1.2 Fill up forms on-line or email feedback and inquiries or participate in online forums and bulletin boards	Freq.	%
Yes	441	88.2
No	59	11.8
1.3 Made ePayments or eProcurements or eRegistrations	Freq.	%
Yes	397	79.4
No	103	20.6
1.4 . Have personalisation/customisation of eServices or Web services	Freq.	%
Yes	206	41.2
No	294	58.8

4.7.2.3. Perceived Usefulness by Business Employees

Table 18 renders the perceived usefulness of eGovernment by business employees. Upon analysis, the respondents find it **very useful** the “more flexible working hours” with the highest weighted mean of 4.30. Furthermore, “reduction of fraud and corruption” , “reduction of processing time of transactions”, “time saving of public servants”, “reduction of error-rates, rework, and complaints”, reduction of the need for multiple collections from the customer”, “more accurate, up-to-date and reliable data and information”, “greater information sharing across the government”, “improve security- no security breaches, “less

redundancy through integrated services”, “reduction of user time (hours saved) and “transparency of processes and transactions” are **useful** with weighted means of 4.03, 3.68, 4.18, 3.59, 3.79, 4.19, 4.15, 3.97, 4.19, 4.15, 3.97, 4.08, 4.01 and 4.1. Moreover, “reduction of travel costs and road congestion”, “reduction of needed physical presence, “ and “price reduction of service charges” are **moderately useful** with weighted means of 3.17, 3.14 and 2.92 respectively. . Overall, the perceived usefulness by business employees on eGovernment is **useful**.

Table 18
Perceived Usefulness by Business Employees

Indicators	VU	U	MU	LU	NU	Weighted Mean	DR
1.1.1. Reduction of fraud and corruption.	219	149	113	19		4.03	U
1.1.2. Reduction of travel costs, and road congestion	29	167	179	112	13	3.17	MU
1.1.3. Reduction of needed physical presence.	62	123	163	127	25	3.14	MU
1.1.4. Reduction of processing time of transactions.	133	115	214	36	2	3.68	U
1.1.5. Time saving of public servants.	219	191	53	37		4.18	U
1.1.6. Reduction of error-rates, rework and complaints	113	107	245	35		3.59	U
1.1.7. Reduction of the need for multiple collections from single customer.	111	191	182	15	1	3.79	U
1.1.8. More flexible working hours	231	194	72	3		4.30	VU
1.1.9. More accurate, up-to-date and reliable data and information.	233	155	87	25		4.19	U
1.1.10. Greater information sharing across government.	231	132	120	17		4.15	U
1.1.11. Improve security – no security breaches	141	211	143	5		3.97	U
1.1.12. Less redundancy through integrated services	198	172	103	27		4.08	U
1.1.13. Price reduction of service charges	51	103	130	189	27	2.92	MU

1.1.14. Reduction of user time (hours saved)	189	149	143	19		4.01	U
1.1.15. Transparency of processes and transactions	217	131	137	15		4.1	U
Overall Weighted Mean						3.82	U

Legend: 4.21 – 5.00 Very Useful (VU) 1.81 – 2.60 Less Useful (LU)
3.41 - 4.20 Useful (U) 1.00 – 1.81 Not Useful at all (NU)
2.61-3.40 Moderately Useful (MU)

4.7.2.4. Perceived Ease of Use by Business Employees

Table 19 depicts the perceived ease of use of eGovernment by business employees. Upon analysis, the respondents find it **easy to use** the “sufficiency and overall content of the directory” , “pleasantness of the overall look”, “appropriateness of vocabulary language”, “correctness of grammar and spelling” “ clarity and appropriateness of text on font, sizes and readability”, “orderliness of organisation of the contents” , “mobility of the user on the site”, “consistency of style throughout”, “functionality of links”, “24/7 service delivery in multi-channels”, and “timeliness of information” with weighted means of 3.43, 3.66, 3.9, 3.94, 3.95, 3.62, 3.61, 3.79, 3.99, 4.04 and 3.93 respectively. Moreover, “the easiness of overall navigation”, “accuracy and sufficiency of information”, “customer interface and usability”, and “appropriateness of illustrations” are **moderately easy to use** with weighted mean of 3.22, 3.28, 3.29 and 3.16 respectively. Overall, the perceive ease of use of eGovernment employees by business employees are **moderately easy to use** with a weighted mean of 3.65.

Table 19
Perceived Ease of Use by Business Employees

Indicators	VE	E	ME	LE	NE	Weighted Mean	D R
1.2.1. Sufficiency of overall content and directory	99	135	183	48	35	3.43	E
1.2.2. Easiness of overall navigation.	103	86	155	133	23	3.22	M E
1.2.3. Pleasantness of the overall look.	116	149	196	27	12	3.66	E
1.2.4. Appropriateness of vocabulary/ language	159	167	148	17	9	3.9	E
1.2.5. Correctness of grammar and spelling.	139	203	147	11		3.94	E
1.2.6. Clarity and appropriateness of text on font, sizes and readability.	171	143	180	4	2	3.95	E
1.2.7. Orderliness of organisation of the contents	135	127	161	67	10	3.62	E
1.2.8. Accuracy and sufficiency of information.	59	167	167	72	35	3.28	M E
1.2.9. Mobility of the user in the site	116	159	153	59	13	3.61	E
1.2.10 Consistency of style throughout.	131	167	176	19	19	3.79	E
1.2.11. Functionality of links.	199	141	129	22	9	3.99	E
Customer interface and usability	98	133	139	79	51	3.29	M E
1.2.13. 24/7 service delivery in multi-channels	171	189	132	8		4.04	E
1.2.14. Timeliness of Information	148	193	145	7	7	3.93	E
1.2.15. Appropriateness of Illustrations.	89	127	117	113	54	3.16	M E
Overall Weighted Mean						3.65	M E

Legend: 4.21 – 5.00 Very Easy to Use (VE)
(LE)

1.81 – 2.60 Less Easy to Use

3.41 - 4.20 Easy to Use (E) 1.00 – 1.81 Not Easy to Use at
all (NE)
2.61-3.40 Moderately Easy to Use (ME)

4.7.2.5. Level of Completion of eGovernment by Business Employees

Table 20 exhibits the level of completion of eGovernment of Dubai according to business employees. Upon analysis, the indicators that the “website portal provides accurate, up-to-date, and relevant information to customers”, “website portal allows information queries and forms to be completed on-line on government services”, website/ portal allows an exchange of value as government agencies interact directly with clients on-line, including recording, and storing sensitive information” are perceived as **largely completed** with weighted means 3.45, 3.94 and 3.84 respectively. However, that the “website portal integrates government services based on needs and functions, and not on departments or agencies” is made out as **half completed** with the least mean of 3.37. Overall, the level of completion of eGovernment of Dubai by business employees is **largely completed** with a weighted mean of 3.65.

Table 20**Level of Completion of eGovernment of Dubai by Business Employees**

Indicators	WC	LC	HC	FC	NC	Weighted Mean	DR
2.1.1. Website/portal provides accurate, up-to-date, and relevant information to customers.	75	191	119	115		3.45	LC
2.1.2. Website/ portal allows informational queries and forms to be completed on-line on government services.	186	147	118	49		3.94	LC
2.1.3. Website/portal allows an exchange of value as government agencies interact directly with clients on-line, including recording, and storing sensitive information.	183	129	117	71		3.84	LC
2.1.4. Website/ portal integrates government services based on needs and functions, and not on departments or agencies.	95	136	129	140		3.37	HC
Overall Weighted Mean						3.65	LC

Legend: 4.21-5.00 Wholly Completed (WC) 1.81 – 2.60 Few Completed (FC)
3.41-4.20 Largely Completed (LC) 1.00 – 1.81 Not any initiative
is completed (NC)
2.61-3.40 Half Completed (HC)

4.7.2.6. Level of Acceptance of eGovernment of Dubai by Business Employees

Table 21 illustrates the level of acceptance of eGovernment of Dubai according to business employees. Upon analysis, all the indicators that the “website portal provides accurate, up-to-date, and relevant information to customers”, “website portal allows information queries and forms to be completed on-line on government services”, website/ portal allows an exchange of value as government agencies interact directly with clients on-line, including recording, and storing sensitive information”, and the “website portal integrates government services based on needs and functions, and not on departments or agencies” are all **accepted** with weighted means of 3.70, 3.59, 3.66 and 3.60 respectively. Overall, the level of acceptance of eGovernment of Dubai by business employees is **accepted** with a weighted mean of 3.63.

Table 21
Level of Acceptance of eGovernment of Dubai by Business Employees

Indicators	VA	A	MA	SA	NA	Weighted Mean	DR
2.1.1. Website/portal provides accurate, up-to-date, and relevant information to customers.	149	141	123	87		3.70	A
2.1.2. Website/ portal allows informational queries and forms to be completed on-line on government services.	103	177	135	85		3.59	A
2.1.3. Website/portal allows an exchange of value as government agencies interact directly with clients on-line, including recording, and storing sensitive information.	113	161	171	55		3.66	A
2.1.4. Website/ portal integrates government services based on needs	117	159	133	91		3.60	A

and functions, and not on departments or agencies.							
Overall Weighted Mean						3.63	A

Legend: 4.21-5.00 Very Much Accepted (VA) 1.81 – 2.60 Slightly Accepted (SA)
3.41-4.20 Accepted (A) 1.00 – 1.81 Not accepted at all (NA)
2.61-3.40 Moderately Accepted (MA)

4.7.2.7. Factors/Challenges towards a Successful Transformation of eGovernment by Business Employees

Table 22 exposes the factors/ challenges towards a successful transformation of eGovernment by business employees. Upon analysis, the indicators “ICT infrastructure”, “Human Capital development”, “Leadership Role” are rated as **very important** with weighted means of 4.27, 4.24 and 4.23 respectively. On the other hand, indicators like “Policy Issues”, Change Management”, Partnership and Collaboration”, “Strategy” are considered **important** with weighted means of 3.99, 3.67, 3.52 and 3.59 respectively. Overall, the factors/ challenges towards a successful transformation of eGovernment of Dubai business employees are **important** with a weighted mean of 3.93. According to Abdulrazaq in his article “From Convention to Innovation”, the big stumbling block in the way of eGovernance, however, is the huge gap between users, particularly individuals and eServices, May people lack the knowledge to deal with electronic channels³⁰¹.

Table 22
Factors/Challenges towards a Successful Transformation of eGovernment by Business Employees

Indicators	VI	I	MI	SI	NI	Weighted Mean	DR
4.1. ICT infrastructure (eReadiness, telecommunication equipment)	238	164	94	4		4.27	VI
4.2. Policy issues (legislation)	183	161	127	29		3.99	I
4.3. Human Capital Development (skills, education, learning)	242	142	111	5		4.24	VI
4.4. Change management (culture, resistance to change)	153	125	130	92		3.67	I
4.5. Partnership and collaboration (public/private partnership,	123	119	157	101		3.52	I

³⁰¹ Abdulrazaq, K. “eGovernance: From Convention to Innovation”
e4all: Issue 49, 2007. 16.

community and network creation)							
4.6. Strategy (vision, mission	147	107	143	103		3.59	I
4.7. Leadership role (motivate, involve, influence, support)	239	152	95	14		4.23	VI
Overall Weighted Mean						3.93	I

Legend: 4.21 – 5.00 Very Important (VI) 1.81 – 2.60 Slightly Important (SI)
3.41 - 4.20 Important (I) 1.00 – 1.81 Not Important at all (NI)
2.61-3.40 Moderately Important (MI)

4.7.2.8. Impact/ Opportunities of eGovernment towards the Development of Dubai by Business Employees

Table 23 illustrates impact/ opportunities of eGovernment towards the development of Dubai by business employees. Upon analysis, The “efficiency gains”, “transparency, anticorruption, accountability”, “increase the capacity of government”, “network and community creation”, “improve the quality of decision making”, “promote the use of ICT in other sectors of the society” is rated as significant with weighted means of 3.73, 3.50, 3.80, 3.58, 3.73, and 3.76 respectively. However, the indicators “cost reduction” and “quality of service delivery to clients” are rated as **moderately significant**. Overall, the impact/ opportunities of eGovernment towards the development of Dubai by business employees are **significant** with a weighted mean of 3.98.

Table 23
Impact/ Opportunities of eGovernment towards the Development of Dubai
by Business Employees

Indicators	VS	S	MS	SS	NS	Weighted Mean	DR
5.1. Cost reduction	52	53	93	175	127	2.45	MS
5.2. Efficiency gains	167	103	161	69		3.73	S
5.3. Quality of service delivery to clients	129	137	95	42	97	3.31	MS
5.4. Transparency, anticorruption, accountability	105	165	119	97	14	3.50	S
5.5. Increase the capacity of government	193	123	86	89	9	3.80	S
5.6. Network and community creation	133	117	165	80	5	3.58	S
5.7. Improve the quality of decision making	167	132	107	91	3	3.73	S
5.8. Promote use of ICT in other sectors of the society	161	123	155	61		3.76	S
Overall Weighted Mean						3.98	S

Legend: 4.21 – 5.00 Very Significant (VS) 1.81 – 2.60 Slightly Significant (SS)
 3.41 - 4.20 Significant (S) 1.00 – 1.81 Not Significant at all (NS)
 2.61-3.40 Moderately Significant (MS)

4.7.3. Presentation and Analysis of Data on Government Employees

4.7.3.1. General Information on Government Employees

Table 24 depicts the general information on government employees surveyed. Upon analysis, along gender, three hundred and seventeen (317) or 63.4% are male while one hundred eighty three (183) or 36.6% are female. The emiratisation programmes of Dubai

which aims to encourage employment of UAE nationals in government departments proved successful as most of the employees are nationals. However there is also a mix of culture in the government employment. Two hundred and thirty seven (237) or 47.4% are UAE nationals, ninety three (93) or 18.6% belongs to Arab Countries, eighty three (83) or 16.6% are Europeans, sixty eight or 13.6% are Asians, and nineteen (19) or 3.8 are Africans. On the age bracket, one hundred and ninety one or 38.2% belong to age group of “26-35”, one hundred and seventy eight (178) or 35.6% are “36-45”, seventy six (76) or 15.2% are “18-25”, while fifty five (55) or 11% are in “46-60”. On education, two hundred and thirty seven (237) or 47.4% have bachelor degrees or graduates, while two hundred sixty three (263) or 52.6% are postgraduates.

Table 24
General Information on Government Employees

Gender	Freq.	%
Male	317	63.4
Female	183	36.6
Nationality	Freq.	%
UAE	237	47.4
Arab Countries	93	18.6
European	83	16.6
Asian	68	13.6
African	19	3.8
Others		
Age Bracket	Freq.	%
Below 18		
18-25	76	15.2
26-35	191	38.2
36-45	178	35.6
46-60	55	11
Education	Freq.	%
Illiterate		
Literate		

Secondary School		
Undergraduate		
Graduate	237	47.4
Post Graduate	263	52.6

4.7.3.2. Experiences of eServices/eGovernment by Government Employees

Table 25 presents the experiences of eServices/ eGovernment by the government employees. Upon analysis, all government employees that is five hundred of the respondents (500) or 100% have availed or use eServices/ eGovernment of Dubai, have accessed published information or search information or disseminate information, have filled up forms on line or email feedback and inquiries or participate in online forums and bulletin boards, and have made ePayments or eProcurements or eRegistrations. However, only one hundred twelve (112) or 22.4% have rated that there is personalisation/ customisation of eServices or Web services. Three hundred eighty eight of the respondents (388) or 77.6% expressed that they did not have personalisation of eServices or web services.

Table 25**Experience of eServices/eGovernment by Government Employees**

1. Have you availed or use eService/eGovernment of Dubai?	Freq.	%
Yes	500	100
No		
1.1 Access published information or search information or disseminate information	Freq.	%
Yes	500	100
No		
1.2 Fill up forms on-line or email feedback and inquiries or participate in online forums and bulletin boards	Freq.	%
Yes	500	100
No		
1.3 Made ePayments or eProcurements or eRegistrations	Freq.	%
Yes	500	100
No		
1.4 . Have personalisation/customisation of eServices or Web services	Freq.	%
Yes	112	22.4
No	388	77.6

4.7.3.3. Perceived Usefulness by Government Employees

Table 26 exposes the perceived usefulness of eGovernment by government employees. Upon analysis, the respondents find it **very useful** the “reduction of fraud and corruption”, and “reduction of processing time of transactions” and “improve security- no security breaches with weighted means of 4.23, 4.22 and 4.24 respectively. Also the respondents rated as **useful** the “reduction of travel costs and road congestion”, “reduction of needed physical presence, “time saving of public servants”, “reduction of error-rates, rework, and complaints”, “reduction of the need for multiple collections from the customer”, “more

flexible working hours” “more accurate, up-to-date and reliable data and information”, “greater information sharing across the government”, “less redundancy through integrated services”, “price reduction of service charges” , “reduction of user time (hours saved) , “transparency of processes and transactions” are **useful** with weighted means of 3.89, 3.85, 4.15, 4.12, 3.95, 4.17, 4.11, 4.2, 4.13, 4.07, 4.14 and 4.10 respectively. Overall, the perceived usefulness on eGovernment by government employees is **useful** with a weighted mean of 4.10.

Table 26
Perceived Usefulness by Government Employees

Indicators	VU	U	MU	LU	NU	Weighted Mean	DR
Reduction of fraud and corruption.	218	181	101			4.23	VU
1.1.2. Reduction of travel costs, and road congestion	141	165	194			3.89	U
1.1.3. Reduction of needed physical presence.	129	169	202			3.85	U
1.1.4. Reduction of processing time of transactions.	219	175	106			4.22	VU
1.1.5. Time saving of public servants.	195	186	119			4.15	U
1.1.6. Reduction of error-rates, rework and complaints	192	178	130			4.12	U
1.1.7. Reduction of the need for multiple collections from single customer.	153	171	176			3.95	U
1.1.8. More flexible working hours	201	183	116			4.17	U
1.1.9. More accurate, up-to-date and reliable data and information.	181	195	124			4.11	U

1.1.10. Greater information sharing across government.	209	182	109			4.2	U
1.1.11. Improve security – no security breaches	213	192	95			4.24	VU
1.1.12. Less redundancy through integrated services	193	181	126			4.13	U
1.1.13. Price reduction of service charges	176	185	139			4.07	U
1.1.14. Reduction of user time (hours saved)	189	192	119			4.14	U
1.1.15. Transparency of processes and transactions	185	183	132			4.10	U
Overall Weighted Mean						4.10	U

Legend: 4.21 – 5.00 Very Useful (VU) 1.81 – 2.60 Less Useful (LU)
3.41 - 4.20 Useful (U) 1.00 – 1.81 Not Useful at all (NU)
2.61-3.40 Moderately Useful (MU)

4.7.3.4. Perceived Ease of Use by Government Employees

Table 27 renders the perceived ease of use of eGovernment by government employees. Upon analysis, the respondents find it **very easy to use** the “clarity and appropriateness of text on font, sizes and readability”, “24/7 service delivery in multi-channels” and “timeliness of information” with weighted means of 4.21, 4.26 and 4.24. The indicators “sufficiency and overall content of the directory” , “the easiness of overall navigation”, “pleasantness of the overall look”, “appropriateness of vocabulary language”, “correctness of grammar and spelling” , “orderliness of organisation of the contents” , “accuracy and sufficiency of information”, mobility of the user on the site”, “consistency of style throughout”, “functionality of links”, “customer interface and usability”, and appropriateness of illustrations are rated as **easy to use** with weighted means of 3.86, 3.91, 3.96, 4.13, 4.13, 4.14, 4.16, 4.15, 4.16, 4.12, 4.18 and 4.09. Overall, the perceive ease of use of eGovernment by government employees are **easy to use** with a weighted mean of 4.11.

Table 27
Perceived Ease of Use by Government Employees

Indicators	VE	E	ME	LE	NE	Weighted Mean	DR
1.2.1. Sufficiency of overall content and directory	131	167	202			3.86	E
1.2.2. Easiness of overall navigation.	137	179	184			3.91	E
1.2.3. Pleasantness of the overall look.	146	187	167			3.96	E
1.2.4. Appropriateness of vocabulary/ language	197	171	132			4.13	E
1.2.5. Correctness of grammar and spelling.	191	185	124			4.13	E
1.2.6. Clarity and appropriateness of text on font, sizes and readability.	204	198	98			4.21	VE
1.2.7. Orderliness of organisation of the contents	190	192	118			4.14	E
1.2.8. Accuracy and sufficiency of information.	193	194	113			4.16	E
1.2.9. Mobility of the user in the site	192	191	117			4.15	E
1.2.10 Consistency of style throughout.	190	199	111			4.16	E
1.2.11. Functionality of links.	180	199	121			4.12	E
Customer interface and usability	202	188	110			4.18	E
1.2.13. 24/7 service delivery in multi- channels	217	194	89			4.26	VE
1.2.14. Timeliness of Information	213	196	91			4.24	VE

1.2.15. Appropriateness of Illustrations.	184	180	136			4.09	E
Overall Weighted Mean						4.11	E

Legend: 4.21 – 5.00 Very Easy to Use (VE) 1.81 – 2.60 Less Easy to Use (LE)
3.41 - 4.20 Easy to Use (E) 1.00 – 1.81 Not Easy to Use at all (NE)
2.61-3.40 Moderately Easy to Use (ME)

4.7.3.5. Level of Completion of eGovernment by Government Employees

Table 28 shows the level of completion of eGovernment according to government employees. Upon analysis, the indicators that the “website portal provides accurate, up-to-date, and relevant information to customers”, “website portal allows information queries and forms to be completed on-line on government services”, “website/ portal allows an exchange of value as government agencies interact directly with clients on-line, including recording, and storing sensitive information” are perceived as **largely completed** with weighted means 4.13, 4.11 and 4.15 respectively. However, the “website portal integrates government services based on needs and functions, and not on departments or agencies” is rated as **half completed** with a weighted mean of 3.38. Overall, the level of completion of eGovernment of Dubai by government employees is **largely completed** with a weighted mean of 3.94.

Table 28
Level of Completion of eGovernment by Government Employees

Indicators	WC	LC	HC	FC	NC	Weighted Mean	DR
2.1.1. Website/portal provides accurate, up-to-date, and relevant information to customers.	185	196	119			4.13	LC
2.1.2. Website/ portal allows informational queries and forms to	199	197	104			4.11	LC

be completed on-line on government services.							
2.1.3. Website/portal allows an exchange of value as government agencies interact directly with clients on-line, including recording, and storing sensitive information.	190	196	114			4.15	LC
2.1.4. Website/ portal integrates government services based on needs and functions, and not on departments or agencies.	58	74	368			3.38	HC
Overall Weighted Mean						3.94	LC

Legend: 4.21-5.00 Wholly Completed (WC) 1.81 – 2.60 Few Completed (FC)
3.41-4.20 Largely Completed (LC) 1.00 – 1.81 Not any initiative is completed (NC)
2.61-3.40 Half Completed (HC)

4.7.3.6. Level of Acceptance of eGovernment of Dubai by Government Employees

Table 29 exhibits the level of acceptance of eGovernment according to government employees. Upon analysis, all the indicators that the “website portal provides accurate, up-to-date, and relevant information to customers”, “website portal allows information queries and forms to be completed on-line on government services”, website/ portal allows an exchange of value as government agencies interact directly with clients on-line, including recording, and storing sensitive information” , and the “website portal integrates government services based on needs and functions, and not on departments or agencies” are all **accepted** with weighted means of 4.16, 4.17, 4.18, 4.19 respectively. Overall, the level of acceptance of eGovernment by government employees is **accepted** with a weighted mean of 4.17.

Table 29
Level of Acceptance of eGovernment by Government Employees

Indicators	VA	A	MA	SA	NA	Weighted Mean	DR
2.1.1. Website/portal provides accurate, up-to-date, and relevant information to customers.	194	194	112			4.16	A
2.1.2. Website/ portal allows informational queries and forms to be completed on-line on government services.	199	191	110			4.18	A
2.1.3. Website/portal allows an exchange of value as government agencies interact directly with clients on-line, including recording, and storing sensitive information.	195	194	111			4.17	A
2.1.4. Website/ portal integrates government services based on needs and functions, and not on departments or agencies.	198	200	102			4.19	A
Overall Weighted Mean						4.17	A

Legend: 4.21-5.00 Very Much Accepted (VA) 1.81 – 2.60 Slightly Accepted (SA)
 3.41-4.20 Accepted (A) 1.00 – 1.81 Not accepted at all (NA)
 2.61-3.40 Moderately Accepted (MA)

4.7.3.7. Factors/Challenges towards a Successful Transformation of eGovernment by Government Employees

Table 30 exposes the factors/ challenges towards a successful transformation of eGovernment by government employees. Upon analysis, the indicators Human Capital development”, “Partnership and Collaboration”, “Strategy”, “Leadership Role” are rated as **very important** with weighted means of 4.52, 4.43, 4.46 and 4.46. On the other hand, “ICT infrastructure”, “Policy Issues”, “and Change Management” are considered as **important** with weighted means of 4.10, 4.09 and 4.14. Overall, the factors/ challenges towards a successful transformation of eGovernment by business employees are **very important** with a weighted mean of 4.31

Table 30
Factors/Challenges towards a Successful Transformation of eGovernment by Government Employees

Indicators	VI	I	MI	SI	NI	Weighted Mean	DR
4.1. ICT infrastructure (eReadiness, telecommunication equipment)	146	260	94			4.10	I
4.2. Policy issues (legislation)	155	237	108			4.09	I
4.3. Human Capital Development (skills, education ,learning)	281	196	23			4.52	VI
4.4. Change management (culture, resistance to change)	187	196	117			4.14	I
4.5. Partnership and collaboration (public/private partnership, community and network creation)	263	189	48			4.43	VI
4.6. Strategy (vision, mission)	268	195	37			4.46	VI
4.7. Leadership role (motivate, involve, influence,	271	190	39			4.46	VI

accountability							
5.5. Increase the capacity of government	287	194	19			4.54	VS
5.6. Network and community creation	223	118	159			4.19	S
5.7. Improve the quality of decision making	289	182	29			4.52	VS
5.8. Promote use of ICT in other sectors of the society	219	129	152			4.13	S
Overall Weighted Mean						4.33	VS

Legend: 4.21 – 5.00 Very Significant (VS) 1.81 – 2.60 Slightly Significant (SS)
3.41 - 4.20 Significant (S) 1.00 – 1.81 Not Significant at all (NS)
2.61-3.40 Moderately Significant (MS)

4.7.4. Presentation and Analysis of Data on Comparison of All Respondents

4.7.4.1. Comparison of General Information on All Respondents

Table 32 depicts the comparison of General Information on all respondents. Upon analysis, the total male is nine hundred fifty one (951) or 63.4% while the female is five hundred forty nine (549) or 36%. On nationality, UAE respondents are three hundred sixty nine (369) or 24.6, Arab countries are two hundred forty (240) or 16%, Europeans are two hundred five (205) or 13.6%, Asians are five hundred sixty three (563) or 37.5% and Africans are one hundred twenty three (123) or 8.2%. On the age bracket, “18-25” years of age are two hundred six (206) or 13.7%, “26-35” are seven hundred sixty three (763) or 50.9%, “36-45” are four hundred thirty (430) are 28.7% and “46-60” are one hundred one (101) or 6.7%. On education, those who finish secondary school are thirty (30) or 2%, undergraduates are one hundred four (104) or 6.9% , graduates are eight hundred and fifty five (855) or 57% , and post graduates are five hundred eleven (511) or 34%.

Table 32
Comparison of General Information on All Respondents

Gender	CC		BE		GE		Total	
Male	335	67%	311	62.2	317	63.4	951	63.4
Female	165	33	189	37.8	183	36.6	549	36.6
Nationality	CC		BE		GE		Total	
UAE	58	11.6	62	12.4	237	47.4	369	24.6
Arab Countries	65	13	82	16.4	93	18.6	240	16
European	60	12	74	14.8	83	16.6	205	13.6
Asian	275	55	220	44	68	13.6	563	37.5
African	42	8.4	62	12.4	19	3.8	123	8.2
Age Bracket	CC		BE		GE		Total	
18-25	47	9.4	83	16.6	76	15.2	206	13.7
26-35	308	61.6	264	52.8	191	38.2	763	50.9
36-45	121	24.2	131	26.2	178	35.6	430	28.7
46-60	24	4.8	22	4.4	55	11	101	6.7
Education	CC		BE		GE		Total	
Secondary School	18	3.6					30	2
Undergraduate	27	5.4	77	15.4			104	6.9
Graduate	343	68.6	287	57.4	237	47.4	855	57
Post Graduate	112	22.4	136	27.2	263	52.6	511	34

4.7.4.2. Comparison of Experience of eServices/eGovernment by All Respondents

Table 33 shows the comparison of experience of eServices/EGovernment by all respondents. Upon analysis, in totality, one thousand and four hundred nineteen (1419) or 94.6% have availed or used eServices/ eGovernment of Dubai while eighty one (81) or 5.4% have not availed. The researcher noted however that all government employees have availed or use eServices/ eGovernment of Dubai. One thousand and four hundred nine teen (1,419) or 94.6% have accessed published information or search information or disseminate information, while eighty one (81) or 5.4% have not. The researcher also observed that all government employees have accessed published information or search

information or disseminate information. One thousand three hundred fifty (1,350) or 90% have filled up forms on line or email feedback and inquiries or participate in online forums and bulletin boards while one hundred fifty (150) respondents or 10% have not. The researcher noted however that all government employees have filled up forms on line or email feedback and inquiries or participate in online forums and bulletin boards. One thousand two hundred eighty (1,280) or 85.3% have made ePayments or eProcurements or eRegistrations while two hundred twenty (220) or 14.7% have not. The researcher once gain noted that all government employees have made ePayments or eProcurements or eRegistrations. However, only five hundred ten (510) or 34% have rated that there is personalisation/ customisation of eServices or web services. Nine hundred ninety (990) or 66% expressed that they did have personalisation of eServices or web services.

Table 33

Comparison of Experience of eServices/eGovernment by All Respondents

1. Have you availed or use eService/eGovernment of Dubai?	CC		BE		GE		Total	
Yes	446	89.2	473	94.6	500	100	1419	94.6
No	54	10.8	27	5.4			81	5.4
1.1 Access published information or search information or disseminate information	CC		BE		GE		Total	
Yes	446	89.2	473	94.6	500	100	1419	94.6
No	54	10.8	27	5.4			81	5.4
1.2 Fill up forms on-line or email feedback and inquiries or participate in online forums and bulletin boards	CC		BE		GE		Total	
Yes	409	81.8	441	88.2	500	100	1350	90
No	91	18.2	59	11.8			150	10
1.3 Made ePayments or eProcurements or eRegistrations	CC		BE		GE		Total	

Yes	383	76.6	397	79.4	500	100	1280	85.3
No	117	23.4	103	20.6			220	14.7
1.4Have personalisation/ customisation of eServices or Web services	CC		BE		GE		Total	
Yes	192	38.4	206	41.2	112	22.4	510	34
No	308	61.6	294	58.8	388	77.6	990	66

4.7.4.3. Comparison of Perceived Usefulness by All Respondents

Table 34 renders the perceived usefulness of eGovernment by all respondents. Upon analysis, all respondents find it **very useful** the “more flexible working hours” and greater information sharing across the government” with weighted means of 4.28 and 4.24 respectively. Also the respondents also rated as **useful** the “reduction of fraud and corruption”, “reduction of travel costs and road congestion”, “reduction of needed physical presence, “reduction of processing time of transactions”, “time saving of public servants”, “reduction of error-rates, rework, and complaints”, “reduction of the need for multiple collections from the customer”, “more accurate, up-to-date and reliable data and information”, “improve security- no security breaches”, “less redundancy through integrated services”, “reduction of user time (hours saved)” , “transparency of processes and transactions” with weighted means of 4.19, 3.64, 3.66, 3.74, 4.20, 3.79, 3.79, 4.15, 4.03, 4.19, 4.08 and 4.09 respectively. However, all the respondents find the “price reduction of service charges” **moderately useful** with weighted mean of 3.39. Overall, the perceived usefulness on eGovernment by all respondents is **useful** with a weighted mean of 3.96.

Table 34
Comparison of Perceived Usefulness by All Respondents

Indicators	CC		BE		GE		Total	
1.1.1. Reduction of fraud and corruption.	4.3 2	VU	4.0 3	U	4.2 3	VU	4.1 9	U
1.1.2. Reduction of travel costs, and road congestion	3.8 5	U	3.1 7	M U	3.8 9	U	3.6 4	U
1.1.3. Reduction of needed physical presence.	3.9 9	U	3.1 4	M U	3.8 5	U	3.6 6	U
1.1.4. Reduction of processing time of transactions.	3.3 2	M U	3.6 8	U	4.2 2	VU	3.7 4	U
1.1.5. Time saving of public servants.	4.2 8	VU	4.1 8	U	4.1 5	U	4.2 0	U
1.1.6. Reduction of error-rates, rework and complaints	3.6 8	U	3.5 9	U	4.1 2	U	3.7 9	U
1.1.7. Reduction of the need for multiple collections from single customer.	3.6 5	U	3.7 9	U	3.9 5	U	3.7 9	U
1.1.8. More flexible working hours	4.3 7	VU	4.3 0	VU	4.1 7	U	4.2 8	VU
1.1.9. More accurate, up-to-date and reliable data and information.	4.1 6	U	4.1 9	U	4.1 1	U	4.1 5	U
1.1.10. Greater information sharing across government.	4.1 0	U	4.1 5	U	4.2 3	U	4.2 4	VU
1.1.11. Improve security – no security breaches	3.9 0	U	3.9 7	U	4.2 4	VU	4.0 3	U
1.1.12. Less redundancy through integrated services	4.3 6	VU	4.0 8	U	4.1 3	U	4.1 9	U
1.1.13. Price reduction of service charges	3.1 9	M U	2.9 2	M U	4.1 3	U	3.3 9	M U
1.1.14. Reduction of user time (hours saved)	4.3 7	VU	4.0 1	U	4.1 4	U	4.0 8	U

1.1.15. Transparency of processes and transactions	4.09	U	4.1	U	4.10	U	4.09	U
Total	3.97	U	3.82	U	4.10	U	3.96	U

Legend: 4.21 – 5.00 Very Useful (VU) 1.81 – 2.60 Less Useful (LU)
3.41 - 4.20 Useful (U) 1.00 – 1.81 Not Useful at all (NU)
2.61-3.40 Moderately Useful (MU)

4.7.4.4. Comparison of Perceived Ease of Use by all Respondents

Table 35 shows the perceived ease of use of eGovernment by all respondents. Upon analysis, all respondents find it **easy to use** the “sufficiency and overall content of the directory”, “pleasantness of the overall look”, “appropriateness of vocabulary language”, “correctness of grammar and spelling” , “clarity and appropriateness of text on font, sizes and readability”, “orderliness of organisation of the contents”, “accuracy and sufficiency of information”, “mobility of the user on the site”, “consistency of style throughout”, “functionality of links”, “customer interface and usability”, “24/7 service delivery in multi-channels” “timeliness of information” and “appropriateness of illustrations” with weighted means of 3.41, 3.63, 3.89, 4.04, 4.03, 3.69, 3.52, 3.81, 3.98, 4.05, 3.45, 4.18, 4.06 and 3.45 respectively.

However, respondents find it **moderately easy to use** “the easiness of overall navigation”, with a weighted mean of 3.36. Overall, the perceived ease of use of eGovernment by all respondents are **easy to use** with a weighted mean of 3.77. Correlating to the low rate of the “easiness of overall navigation”, Ahmad Fakhri noted that there is “lack of uniformity among the departments in naming their websites, on rules that differ from one department to another”.³⁰² He also added that these rules are typified by the fact that they have nothing to do with the names used by the common people. He observed that some departments for instance choose to use their full name in English, such as (dubaipolice), followed by the governments domain (gov) and the UAE domain (ae) thus giving the full electronic address of Dubai Police as *dubaipolice.gov. ae*. Other departments choose the

³⁰² Fakhri, A. “Unified Names for the Websites of Dubai Government Departments”. e4all. 67. 2009.

initials of their names in English. For instance, the website of Dubai Municipality is *dm.gov.ae*. In other cases, some departments choose not to add the government domain (gov) to their electronic addresses, being satisfied with the UAE's domain (ae). The Road and Transport Authority in its *rta.ae* is an example.

According to Fakhri in his article “Unified Names for the Websites of Dubai Government Departments”, these website names leave the users at the mercy of online search engines and make the websites vulnerable as some hackers a few months ago have infiltrated the UAE government websites and swindled the users by displaying fake ePay transactions that many users fell victim too. He provided three major ideas for naming the websites of the departments. Firstly, all the addresses of the eGovernment websites of Dubai should be linked to the portal of Dubai Government. For instance, names can have the following form: *municipality.dubai.ae* or *rta.dubai.ae*. Names can also begin with Dubai Government's portal and followed by the departments name such as *www.dubai.ae/municipality*. Second, the common name of the department, whether in Arabic or English, can be used i.e. *awqaf* for Awqaf and Minors Foundation and *roads* for the Roads and Transport Authority, etc. Third, different alternatives of the department's name can be used leaving room for flexibility and providing the user with easy access to the department's website, even if its name has not been specifically remembered³⁰³.

Moreover, in two field surveys that were conducted in August 2008 and the other in July 2009 on Dubai's Web portal itself reveal convincing data that many of the web portal users have not found information that they were looking for or have difficulty looking for information. The results of the replies to the question “Were you able to find the information you were looking for?” in August 2008 with 1, 244 respondents were as follows: no, I could not find it - 45.3%; yes easily – 30.6%, I was only browsing – 16.6%; and yes, after looking for awhile - 7.5%³⁰⁴. On the other hand, a scrutiny in July 2009 of the same question with 4, 441 reveals: no, I could not find it - 39.4%; yes easily – 40.6%, I was only browsing – 12.5%; and yes, after looking for awhile - 7.5%.³⁰⁵

³⁰³ Ibid.

³⁰⁴ “Dubai.ae Through the Eyes of the Users”.
e4all. **58**, 2008. 10-12.

³⁰⁵ Were you able to find the information you were looking for? Dubai Government Information and Services Portal.
http://ads1admin.dubai.ae/poll_en/db/dubai-olls.php?action=results&poll_ident=11 05.07.09.

Table 35
Comparison of Perceived Ease of Use by all Respondents

Indicators	CC		BE		GE		Total	
1.2.1. Sufficiency of overall content and directory	2.9 5	ME	3.4 3	E	3.8 6	E	3.4 1	E
1.2.2. Easiness of overall navigation.	2.9 6	ME	3.2 2	ME	3.9 1	E	3.3 6	ME
1.2.3. Pleasantness of the overall look.	3.2 9	ME	3.6 6	E	3.9 6	E	3.6 3	E
1.2.4. Appropriateness of vocabulary/ language	3.6 4	E	3.9	E	4.1 3	E	3.8 9	E
1.2.5. Correctness of grammar and spelling.	4.0 5	E	3.9 4	E	4.1 3	E	4.0 4	E
1.2.6. Clarity and appropriateness of text on font, sizes and readability.	3.9 4	E	3.9 5	E	4.2 1	VE	4.0 3	E
1.2.7. Orderliness of organisation of the contents	3.3 1	ME	3.6 2	E	4.1 4	E	3.6 9	E
1.2.8. Accuracy and sufficiency of information.	3.1 4	ME	3.2 8	ME	4.1 6	E	3.5 2	E
1.2.9. Mobility of the user in the site	3.6 9	E	3.6 1	E	4.1 5	E	3.8 1	E
1.2.10 Consistency of style throughout.	4.0 1	E	3.7 9	E	4.1 6	E	3.9 8	E
1.2.11. Functionality of links.	4.0 4	E	3.9 9	E	4.1 2	E	4.0 5	E
Customer interface and usability	2.8 8	ME	3.2 9	ME	4.1 8	E	3.4 5	E
1.2.13. 24/7 service delivery in multi-channels	4.2 5	VE	4.0 4	E	4.2 6	VE	4.1 8	E
1.2.14. Timeliness of Information	4.0 1	ME	3.9 3	E	4.2 4	VE	4.0 6	E
1.2.15. Appropriateness of	3.1	E	3.1	ME	4.0	E	3.4	E

Illustrations.	2		6		9		5	
Total	3.5	U	3.6	ME	4.1	E	3.7	E
	5		5		1		7	

Legend: 4.21 – 5.00 Very Easy to Use (VE) 1.81 – 2.60 Less Easy to Use (LE)
3.41 - 4.20 Easy to Use (E) 1.00 – 1.81 Not Easy to Use at all (NE)
2.61-3.40 Moderately Easy to Use (ME)

4.7.4.5. Level of Completion of eGovernment by All Respondents

Table 36 exhibits the level of completion of eGovernment according to all respondents. Upon analysis, the indicators that the “website portal provides accurate, up-to-date, and relevant information to customers”, “website portal allows information queries and forms to be completed on-line on government services”, “website/ portal allows an exchange of value as government agencies interact directly with clients on-line, including recording, and storing sensitive information” are perceived as **largely completed** with weighted means 3.84, 4.05, and 4.09 respectively. However, the “website portal integrates government services based on needs and functions, and not on departments or agencies” is rated as **half completed** with a weighted mean 3.36. Overall, the level of completion of eGovernment according to all respondents is **largely completed** with a weighted mean of 3.83.

Table 36
Comparison of Level of Completion of eGovernment by all Respondents

Indicators	CC		BE		GE		Total	
2.1.1. Website/portal provides accurate, up-to-date, and relevant information to customers.	3.9	LC	3.4	LC	4.1	LC	3.8	LC
	4		5		3		4	
2.1.2. Website/ portal allows informational queries and forms to be completed on-line on government services.	4.1	LC	3.9	LC	4.1	LC	4.0	LC
	0		4		1		5	
2.1.3. Website/portal allows an exchange	4.2	W	3.8	LC	4.1	LC	4.0	LC

of value as government agencies interact directly with clients on-line, including recording, and storing sensitive information.	8	C	4		5		9	
2.1.4. Website/ portal integrates government services based on needs and functions, and not on departments or agencies.	3.3 4	HC	3.3 7	HC	3.3 8	HC	3.3 6	HC
Total	3.9 1	LC	3.6 5	LC	3.9 4	LC	3.8 3	LC

Legend: 4.21-5.00 Wholly Completed (WC) 1.81 – 2.60 Few Completed (FC)
3.41-4.20 Largely Completed (LC) 1.00 – 1.81 Not any initiative is completed (NC)
2.61-3.40 Half Completed (HC)

4.7.4.6. Level of Acceptance of eGovernment by all Respondents

Table 37 illustrates the level of acceptance of eGovernment according to all respondents. Upon analysis, all the indicators that the “website portal provides accurate, up-to-date, and relevant information to customers”, “website portal allows information queries and forms to be completed on-line on government services”, “website/ portal allows an exchange of value as government agencies interact directly with clients on-line, including recording, and storing sensitive information” , and the “website portal integrates government services based on needs and functions, and not on departments or agencies” are all **accepted** with weighted means of 4.00, 4.04, 4.06, 4.00 and 4.02 respectively. Overall, the level of acceptance of eGovernment of Dubai by all respondents is **accepted** with a weighted mean of 4.02.

Table 37
Level of Acceptance of eGovernment by all Respondents

Indicators	CC		BE		GE		Total	
	Mean	Level	Mean	Level	Mean	Level	Mean	Level
2.1.1. Website/portal provides accurate, up-to-date, and relevant information to customers.	4.16	A	3.70	A	4.16	A	4.00	A
2.1.2. Website/ portal allows informational queries and forms to be completed on-line on government services.	4.35	VA	3.59	A	4.18	A	4.04	A
2.1.3. Website/portal allows an exchange of value as government agencies interact directly with clients on-line, including recording, and storing sensitive information.	4.36	VA	3.66	A	4.17	A	4.06	A
2.1.4. Website/ portal integrates government services based on needs and functions, and not on departments or agencies.	4.23	VA	3.60	A	4.19	A	4.00	A
	4.27	VA	3.63	VA	4.17	A	4.02	A

Legend: 4.21-5.00 Very Much Accepted (VA) 1.81 – 2.60 Slightly Accepted (SA)
 3.41-4.20 Accepted (A) 1.00 – 1.81 Not accepted at all (NA)
 2.61-3.40 Moderately Accepted (MA)

4.7.4.7. Factors/Challenges towards a Successful Transformation of eGovernment by all Respondents

Table 38 presents the factors/challenges towards a successful transformation of eGovernment by all respondents. Upon analysis, the indicators “ICT infrastructure”, Human Capital development”, and “Leadership Role” are rated as **very important** with

weighted means of 4.28, 4.33 and 4.32 respectively. On the other hand, “Policy Issues”, “Change Management” “Partnership and Collaboration”, and “Strategy”, are considered as **important** with weighted means of 4.06, 3.95, 3.98 and 4.06 respectively. Overall, the factors/ challenges towards a successful transformation of eGovernment of Dubai by all respondents are **important** with a weighted mean of 4.14.

Table 38
Factors/Challenges towards a Successful Transformation of eGovernment
by All Respondents

Indicators	CC		BE		GE		Total	
	Mean	Level	Mean	Level	Mean	Level	Mean	Level
4.1. ICT infrastructure (eReadiness, telecommunication equipment)	4.47	VI	4.27	VI	4.10	I	4.28	VI
4.2. Policy issues (legislation)	4.10	I	3.99	I	4.09	I	4.06	I
4.3. Human Capital Development (skills, education ,learning)	4.24	VI	4.24	VI	4.52	I	4.33	VI
4.4. Change management (culture, resistance to change)	4.03	I	3.67	I	4.14	I	3.95	I
4.5. Partnership and collaboration (public/private partnership, community and network creation)	3.98	I	3.52	I	4.43	VI	3.98	I
4.6. Strategy (vision, mission)	4.15	I	3.59	I	4.46	VI	4.06	I
4.7. Leadership role (motivate, involve, influence, support)	4.29	VI	4.23	VI	4.46	VI	4.32	VI
	4.18	I	3.93	I	4.31	VI	4.14	I

Legend: 4.21 – 5.00 Very Important (VI) 1.81 – 2.60 Slightly Important (SI)

3.41 - 4.20 Important (I)
all (NI)

1.00 – 1.81 Not Important at

2.61-3.40 Moderately Important (MI)

3.8.4.8. Impact/ Opportunities of eGovernment towards the Development of Dubai by all Respondents

Table 39 exhibits the impact/ opportunities of eGovernment towards the development of Dubai by all respondents. Upon analysis, the indicators “efficiency gains”, “quality of service delivery to clients” “transparency, anticorruption, accountability”, “increase the capacity of government”, “network and community creation”, “improve the quality of decision making” and “promote the use of ICT in other sectors of the society” are rated as **significant** with weighted means of 3.94, 3.67, 3.86, 4.13, 3.97, 4.07 and 4.05 respectively.

On the other hand, the indicator “cost reduction”, is rated as **moderately significant** with a weighted mean of 3.06. Overall, the impact/ opportunities of eGovernment towards the development of Dubai by all respondents are **significant** with weighted mean of 4.00

Table 39
Impact/ Opportunities of eGovernment towards the Development of Dubai
by All Respondents

Indicators	CC		BE		GE		Total	
	Mean	Significance	Mean	Significance	Mean	Significance	Mean	Significance
5.1. Cost reduction	2.31	SS	2.45	MS	4.16	S	3.06	MS
5.2. Efficiency gains	3.61	S	3.73	S	4.48	VS	3.94	S
5.3. Quality of service delivery to clients	3.44	S	3.31	MS	4.25	VS	3.67	S
5.4. Transparency, anticorruption, accountability	3.93	S	3.50	S	4.44	VS	3.86	S
5.5. Increase the capacity of government	4.06	S	3.80	S	4.54	VS	4.07	S

5.6. Network and community creation	4.13	S	3.58	S	4.19	S	3.97	S
5.7. Improve the quality of decision making	3.96	S	3.73	S	4.52	VS	4.07	S
5.8. Promote use of ICT in other sectors of the society	4.26	VS	3.76	S	4.13	S	4.05	S
	3.71	S	3.98	S	4.33	VS	4.00	S

Legend: 4.21 – 5.00 Very Significant (VS) 1.81 – 2.60 Slightly Significant (SS)
3.41 - 4.20 Significant (S) 1.00 – 1.81 Not Significant at all (NS)
2.61-3.40 Moderately Significant (MS)

4.8. Conclusion

This chapter constitutes the main bulk of the study as it focuses on the eGovernment initiatives of Dubai and presents the data gathered from it formulated questionnaire-surveys. The beginning of this chapter explores the etymological foundations of Dubai in its creek, which became the cornerstone of its economic trading success. The dredging of the creek, which was considered ambitious, reveals the visionary leadership of Dubai that starts from the Sheikh Rashed bin Saeed Al Maktoum who was responsible for the dredging and the infrastructure boom of Dubai to the present Dubai Ruler, Sheikh Mohammed bin Rashed Al Maktoum, who introduced free zones and tax-free corporate and personal advantages. As well as visionary leadership, Dubai also promoted high-quality infrastructure, an expatriate-friendly environment, zero-tax on personal and corporate income and low import duties as its blueprint for economic success. In the 20th century, Dubai's leadership set out its Strategic Plan 2015 where it aims to move away from oil dependence and develop the Emirate's dynamic sectors that include among others ICT, tourism, trade, transportation and financial services which are considered its strongest sectors and which incidentally are highly conducive to future progress by international standards.

Moreover, this chapter highlights the Dubai eGovernment which is the flagship programme of the Emirate of Dubai in its use of ICT and Internet in providing information

and services to the public. Launched in 2001 through the official portal of Dubai eGovernment, *www.dubai.ae* it aims to provide online services and information for all citizens, residents, visitors, businesses and other government entities. In 2009, Dubai eGovernment was established as a Government Department in a decree issued by the Dubai Ruler, Sheik Mohammed bin Rashed Al Maktoum. The Dubai eGovernment Department is accorded powers and tasks in devising the overall strategy of the eGovernment and providing leadership, guidance and supervision of the eTransformation process in Dubai. Most importantly, this chapter presents the analysis of data culled from the responses of selected respondents. The presentation of the findings is guided by the research problems and the methodology that were discussed in first chapter.

CHAPTER V

PROGRAMME TO ACHIEVE A SUCCESSFUL eGOVERNMENT

5.1 The Bases of the Proposed Programme to Achieve a Successful eGovernment

The researcher strongly believes that eGovernment implementation in the Emirate of Dubai can do better if the process and systems of implementation involve key concepts in its execution. Based on the salient findings of the research study as presented in the previous chapter and the discussions of eGovernment best practices in high performing countries discussed in Chapter 3 as well as the analysis of models and concepts of E-Government in Chapter 2, the eGovernment implementation by Dubai should realise the Government Bureaucratic Structure by taking into account the Government Leadership, assessing and monitoring the status of eGovernment implementation discussed earlier in chapter 1 with regards to the Technology Acceptance Model (TAM) by Fred Davis, et al by assessing the level of acceptance. Then, the research suggests examining the factors influencing the implementation. These include Diffusion of Innovation (DOI) by Everett Rogers, as well as eGovernment's level of completion. Furthermore, the model suggests also considering examination of challenges and opportunities towards a successful eTransformation of Dubai as well as assessing the impact of eGovernment initiatives and, more importantly, the best practices in E-Government discussed in chapter 3.

In order to recognise eGovernment successful implementation, there should be a unique approach to Dubai to contribute to a growing application and knowledge of E-Government. The researcher proposes and formulates a programme to achieve a successful eGovernment which will integrate the concepts and theories employed in this thesis, first, Lens of Bureaucracy by examining the Bureaucratic Structure of Government by realizing: the vision behind Dubai eGovernment represented by the Sheikh's vision, Division of Labour, and Rules and Regulations; second, monitoring and assessing the status of eGovernment implementation including: perceived usefulness, perceived ease of use, and level of acceptance; third, factors influencing eGovernment implementation namely: Diffusion of Innovation, particularly the Rate of ICT Diffusion; and the eGovernment completion level. Fourth, SWOT analysis is employed to discuss Strengths (S), Weaknesses (W), Opportunities (O) and Threats (T) of eGovernment in Dubai. Each of the four components of SWOT analysis and is further examined according to PESTLE factors, referring to Political (P), Economic (E), Social(S) and Technological (T) Legal (L)

and Environment (E) determinates. SWOT and PESTLE are very useful tools for understanding the big picture of the environment in which Dubai eGovernment is being implemented. Fifth is the impact of eGovernment initiatives towards the development of Dubai. The environment dimension defines the external elements that impact on the eGovernment such as societal conditions, structure, experience and resources. These enable or constrain the successful eGovernment implementation. Sixth and more importantly are the best practices in E-Government across the globe from selected top ranked countries as analysed in chapter 3. Initially, the researcher has conceptualised a model in the shape of a fish bone or arrow to show a directional objective of eGovernment and lines to signify the different concepts needed for effective implementation. Finally, the researcher decided to use a rocket-ship model instead for ingenuity and to show steps in the process of implementation of a successful eGovernment.

5.2 The Al Bakr eGovernment Model of Implementation

The researcher starts the discussion by examining contemporary E-Government related research and literature in each level of the proposed Model. **Figure 11** below is a rocket ship model showing an outline of the key concepts of the programme to achieve successful eGovernment. Based on the researcher's investigation focus and findings on the research questions, particularly on the factors towards a successful eTransformation of Dubai, the programme emphasises that the government structure is the foundation of any government project implementation. **First**, the researcher employs Max Weber's theory components namely: Leadership, Structure, and Regulation as the foundation of the implementation model. **Second**, Technology Acceptance Model by Fred Davis, the level of Perceived Usefulness and Perceived Ease of Use which together determine the Acceptance Level of eGovernment Implementation. **Third**, Diffusion of Innovation Theory by Everett Rogers, employed to assess the accessibility of Information and ICT diffusion as major requirement for successful implementation of Dubai eGovernment and its delivery framework in the scope defined by eGovernment project strategic plan. This is complemented by using performance Key Indicator (KPI), the level of completion, as an indicator of eGovernment transformation progress quantitative measure. The **fourth** level of the suggested model describes the strategic framework of eGovernment implementation in Dubai focusing on external and internal factors while scanning the business environment as Strategic Trend Evaluation Process (STEP). This is followed by eGovernment

Initiatives Impact Assessment and more importantly best practices in E-Government in selected countries as was analysed in Chapter 3. The following section will elaborate more on each level of Al Bakr eGovernment Model of Implementation.

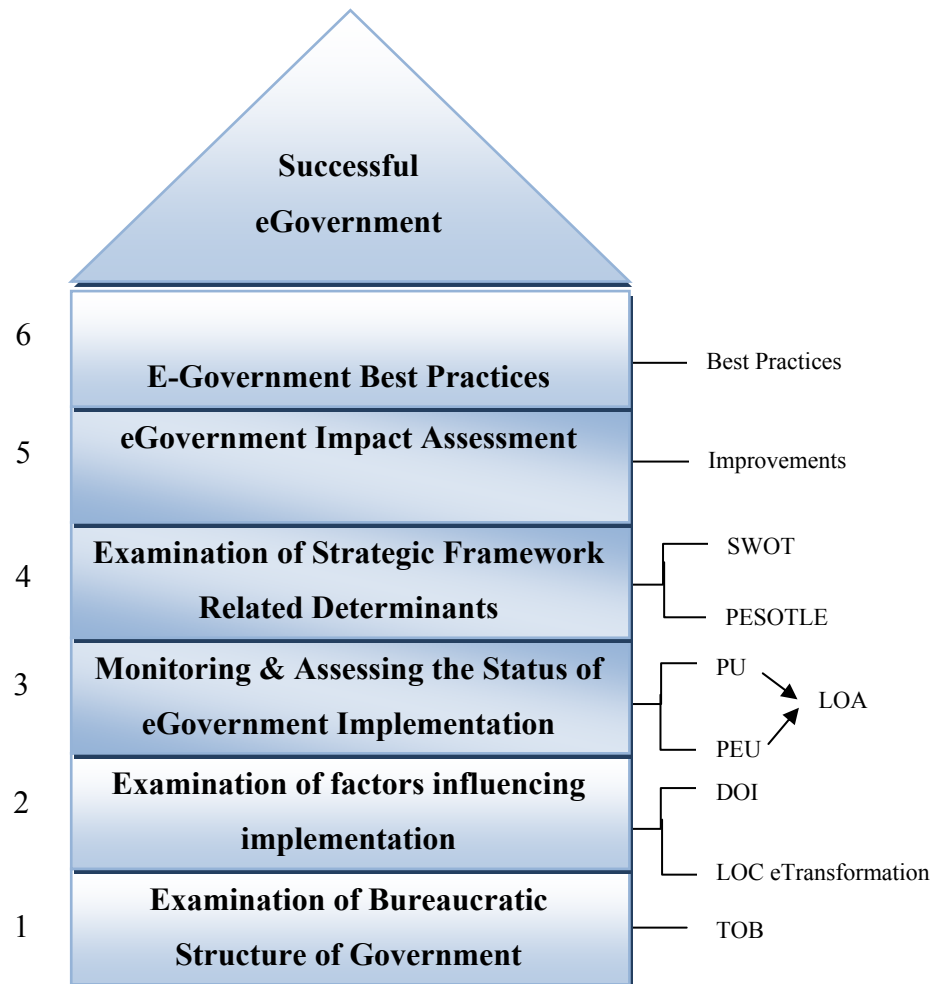


Figure 11 Al Bakr eGovernment Model of Implementation

5.2.1. Examination of Bureaucratic structure of Government

The first level of the Al Bakr eGovernment Model of Implementation is examination of bureaucratic structure of government derived from Vision, Leadership, formal hieratical structure of power and authority, systematic division of labour, employed from Max Weber's Theory of Lens of Bureaucracy. The political and legal infrastructure of the Dubai government have dramatically expanded and a result of oil revenue, which enhanced the social and economic well-being of the people. As mentioned earlier in Chapter IV, Dubai is a Sheikdom, with all power leading towards the ruler, who retain the ultimate decision-

making authority but do not have dictatorial powers and are bound by Shari'a (Islamic Law), by age-old tribal customs and values, and by the process of Shura (consultation).³⁰⁶ Dubai has undergone an impressive transformation over the last four decades, managing to shift its economy from that of fishing, pearling and traditional trading to tourism, mass communications, shipping, and finance. Dubai has created for itself an image synonymous with luxury, multi-billion dollar real-estate ventures; and as proudly described, a “city on creek”.³⁰⁷ The government has adopted international quality management and excellence standards to improve transparency and maximise efficiencies. The structure of the government has evolved over time from traditional official consultative meeting consisting of rulers and heads of tribes to a modern institutional government, first by creating an executive council which serves as a legitimate forum for governance as well as to improve financial accountability among the Ministries (known in Dubai as Departments).³⁰⁸ In addition, the relaxed rules and regulations in all aspects of commercial and business governances have also been incredibly thorough in order to maintain credibility among large multinational investment and business community.

Sheikh Mohammed Bin Rashed Al Maktoum, UAE Prime Minister and Vice President, and the Ruler of Dubai, a charismatic leader who is considered as the responsible for Dubai's next phase of development. His vision provided strategic framework, proposed to be the foundation of the eGovernment implementation in Dubai. The Leadership and Authority are derived from more 'rational' framework. The Sheikh's vision of eGovernment provides the direction where the Emirate is going in its application of ICT and Internet in the provision of its public services and also provides general guidelines in the pursuit of its implementation. This government-wide vision helps to tie eGovernment initiatives with broader strategic and reform objectives and a vision statement can help promote inter-departmental coordination, ensure balance and fairness and help to stay the course over the years. According to an article “The e-Government Imperative”, Sheikh Mohammed Bin Rashed Al Maktoum stated that having a clear vision of reform helps to maintain consistency and a sense of purpose.³⁰⁹ For many decades, Dubai has been

³⁰⁶ Gabriella Gonzalez, Lynn Karoly, Louay Contant, Hanine Salem, Chales Goldman, *Facing Human Capital Challenges of the 21st Century, Education and Labour Market Initiatives in Lebanon, Oman Qatar and the United Arab Emirates*, (USA: RAND Corporation) pp 22-23

³⁰⁷ Michael Matly and Laura Dillon, *Dubai Strategy: Past, Present, Future*, (Harvard Business School, February 27, 2007)
http://belfercenter.ksg.harvard.edu/files/matly_paper1.pdf 23/05/2008

³⁰⁸ Dubai Chamber of Commerce and Industry, “The Economic Bulletin, March 2006, Volume 3, Issue 21”

³⁰⁹ The e-Government Imperative. op.cit. 67-73.

prominent both as a regional commercial centre and as developer of the concept of eGovernment initiative to strengthen Dubai's economic standing. According to an article "A Dialogue with His eVision. Mohammed Bin Rashed: A Knight Allied with the Future", Sheikh Al Maktoum has revealed that he wants Dubai to develop a unique commercial economy in this digital age and is determined to effect the eTransformation of Dubai in a short period of time.³¹⁰

This has left observers wondering whether such a target could be realised in such a short period in a country currently undergoing development of technological infrastructure. Many looked on the idea as excessively ambitious and impossible to achieve. Sheikh Al Maktoum, however, believed strongly in his people, saying "these men and women when given a chance they can channel their capabilities in a creative way".³¹¹ In December 2001, the Sheikh's vision was realised. His highest level of commitment to the eGovernment Initiatives was a motivating and driving force for Dubai eGovernment teams who obeyed his orders out of devotion, loyalty and respect.

Dubai Government functioned on the basis of legitimately derived laws, rules and regulations. According to Max Weber theory of lens of Bureaucracy, laws, rules and regulations derived their legitimacy from the consistent, disciplined rationalised and methodical calculation of optimum means to given ends. The ruler of Dubai stressed that "We asked our executives and manager to shape up and adapt within 18 months or step aside"³¹². He commented "I understand how difficult this task was but I knew it wasn't impossible or unattainable".³¹³ This shows that government officials are appointed base on their qualifications and commitment to overall goals. The eGovernment was officially launched with an official portal and each government department offering services online. According to the same article "A Dialogue with His eVision, Mohammed Bin Rashed: A Knight Allied with the Future", the Sheikh succinctly summed up the eGovernment initiative in one phrase as "a dedicated endeavour to facilitate people's lives and their daily transactions and dealings realising the high quality customer-focused eServices".³¹⁴ This means that government is not an authority over people but one that serve them. He also

³¹⁰ "A Dialogue with His eVision. Mohammed Bin Rashid: A Knight Allied with the Future".
e4all . 1, 2003. : 2-3.

³¹¹ Ibid.

³¹² Sheikh Mohammed speech at the World Economic Forum, Davos, 26th January 2001.

³¹³ Sheikh Mohammed Bin Rashed Speech at the Dubai Government Excellence Programme Awards Ceremony, 19th April 2005.

³¹⁴ Ibid.

stressed upon the importance of ICT "We must strive to make IT and communication developments part of our life and economy".³¹⁵ Mohammed's speech at the World Economic Forum, Davos in 2001 stated "We have shifted from traditional commerce to e-commerce, which we expect to grow greatly in the coming years due to the wise leadership of H.H. Sheikh Maktoum who has made Dubai what it is today with his leadership. We have created an e-government and asked our executives and managers to shape up and adapt within 18 months or step aside. We have made Dubai Internet City a reality in a single year. Since Dubai Internet City was launched, 200 international companies have moved their offices here and many others are on the waiting list. Then we launched the Dubai Media City. We do not wait for things to happen, we make them happen".³¹⁶ At the launch of Dubai Internet city on 29 October 2000, he stated " I had a clear vision; transforming the local economy by making Dubai the hub for the new economy business. My commitment to the new economy business was four-fold. There will be a world-class infrastructure. There will be the right conditions for e-business. There will be a clear, business-friendly attitude. There will be a clear business advantage from operating from Dubai"³¹⁷ As a leader of Dubai Government, Sheikh Mohammed stressed upon his commitment on his vision, Dubai strategy and future plan: "When we deliver, we all have dreams, but only a leader can change these dreams to reality. We all take risks in life but do you know what the biggest risk is? Of not taking risks at all".³¹⁸ Thus, leadership commitment and risk taking are quite important factors in eGovernment implementation framework especially in ICT infrastructure development and project initiation, assessing the compliance of government in ongoing migration milestones and guidelines given to all departments. Sheikh Mohammed's vision is based on four primary axes namely: restructuring government, focusing on human development, launching and completing projects with exceptional speed and involving private sector in development.

Another aspect of lens of bureaucracy is the labour division, which faces multiple social and cultural challenges in the social hierarchy in the UAE with local nationals occupy the highest platform especially in public sector derived by nationalisation programmes (Emiratization), while there is high dependence on expatriates in the private sector due to shortage of technically and professionally qualified nationals.

³¹⁵ Sheikh Mohammed Speech at the Arab ICT Summit, October 12, 2002

³¹⁶ Sheikh Mohammed's speech at the World Economic Forum, Davos , Friday, January 26, 2001

³¹⁷ Sheikh Mohammed's speech at the launch of Dubai Internet City, The Media Office, 29th October 2000

³¹⁸ Ibid

The researcher hypothesises here that ICT is the tool for reforming public organisations in Dubai as it promotes access to government information organised not by agency, but by the type of service or information that end users may be seeking. This overcomes a feature of bureaucracy that breaks down horizontal differentiation and helps to foster improvement in collaboration and information sharing within the government bureaucracies and social divisions, and thus can make government flexible, responsive and efficient; and sharply reduces opportunities for corruption. Therefore, public officials need to re-examine the organising principals of Bureaucracy and governance to achieve successful implementation of eGovernment initiatives.

5.2.2. Examination of factors influencing Implementation:

Level of Completion and Diffusion of Innovations (DOI)

After examining the government structure of Bureaucracy, the second process of the Al Bakr model of eGovernment Implementation is examination of factors influencing eGovernment implementation. It involves measuring two key important performance indicators namely: the level of completion /eTransformation Status; and Diffusion of the Innovation. The later was discussed in details in the in chapter one and based on the Theory by Everett Rogers. The first describes developments in Dubai eGovernment journey in term of eGovernment implementation in terms of task completion or eTransformation status. In most literature, E-Government has been represented by four stages in its development. These include the posting of the information as stage 1, two way communications as stage 2, exchange of value as stage 3 and integrated service and exchange as stage 4. These phases of eGovernment are also incorporated in the questionnaire-surveys which sought to measure the level of completion of eGovernment and the level of acceptance in the eGovernment of Dubai as perceived by the respondents. Both levels are measured through the following indicators that relate to the four stages of eGovernment, namely, first, website/portal provides accurate, up-to-date, and relevant information to customers; second, website/ portal allows informational queries and forms to be completed online on government services; third, website/portal allows an exchange of value as government agencies interact directly with clients online, including recording, and storing sensitive information; and fourth, website/portal integrates with government services based on needs and functions, not on departments or agencies. This model does not imply that all governments have to go through all these phases.

The theory of DOI denotes an innovation adoption curve that categorises adopters and is anchored on the idea that Dubai eGovernment end users are more open to adaptation than others. DOI is also incorporated in the questionnaire survey as the same considers the selection and responses of the three groups of the respondents, namely citizen/customers, business employees and government employees. It is a business principle that successful marketers break down markets into sub-groups by reference to the different needs and characteristics of consumers. This process is essential to producing targeted effective promotion rather than a machine-gun approach which is not only costly but ineffective. According to Bickerton, et al. in their book *Cyber marketing: How to Use the Internet to Market your Goods and Services*, this principle which is also known as segmentation is about understanding the values and desires of subgroups, and making sure the products and messages are right to sell them.³¹⁹

As the Innovation adoption curve of eGovernment and the multi-step flow theory discussed in chapter one, Sheikh Mohammed stated that "one can be a leader or a follower, and we always aim to take the initiative. The whole world will eventually take this path – why not take the lead? Because we were pioneers, and started before other, some people were uncertain".³²⁰

Since both above mentioned factors namely: Level of completion and eGovernment Diffusion, are major requirement for accessibility of information in Dubai eGovernment project implementation and eService delivery, it is vital to consider the diversity of languages, economic conditions, and literacy level, in order to cater the different segments of low income population by offering low cost solutions to meet all expectations.

5.2.3 Monitoring and Assessing the Status of eGovernment Implementation:

The third component of the proposed model is derived from the TAM Model. This theory particularly refers to the Technology Acceptance Model by Fred Davis, et al, The TAM model signifies the measure of the accessibility of an information system as established by two main variables – perceived usefulness and perceived ease of use. These two components have been the thorough subject of inquiry in questionnaire-type surveys

³¹⁹ Bickerton, et al. *Cyber marketing: How to Use the Internet to Market your Goods and Services*. (London: Butterworth-Heinemann, 2000.) 171-194.

³²⁰ Sheikh Mohammed's speech at the inauguration of the Dubai eGovernment Portal, 29 October 2001

prepared by the researcher. See **Appendices no.5-8**. These questionnaire-surveys have sought the opinions about government eServices from customers/ citizens, business employees and government employees. Among the applications of these theories is the outline of the different segments of society and direction of the eServices and the associated awareness programmes to the literate and educated people who can actually benefit from eServices. For instance, one definition of acceptance treats it as the act of adopting eGovernment, that is, the initial decision to use it or not. According to Lootah in a personal interview as shown in **Appendix no. 2**, the acceptances of corporate staff members are higher because they are highly educated.³²¹

Perceived Usefulness specifies the measure by which a person believes that use of a system will improve performance. This has been thoroughly investigated in the questionnaire-surveys that include the following indicators:

1. Reduction of fraud
2. Reduction of travel costs, and road congestion
3. Reduction of needed physical presence
4. Reduction of processing time of transactions
5. Time saving of public servants
6. Reduction of error rates, rework and complaints
7. Reduction of the needs for multiple collections from single customer
8. More flexible working hours
9. More accurate, up-to-date and reliable data and information
10. Greater information sharing across government
11. Improve security – no security breaches
12. Less redundancy through integrated services
13. Price reduction of service charges
14. Reduction of user time (hours saved)
15. Transparency of processes and transactions

On the other hand, the level of perceived ease of use refers to the measure to which a person believes that the use of the system will be effortless or easy. The following indicators have also been incorporated in the questionnaire-surveys to determine the level of easiness of eGovernment initiatives among the citizens/ customers, business employees and government employees:

³²¹ Transcript of Structured Interview with Ms. Rehab Lootah
See Appendix no.2.

1. Sufficiency of the overall content and directory
2. Easiness of overall navigation
3. Pleasantness of the overall look
4. Appropriateness of vocabulary language
5. Correctness of grammar and spelling
6. Clarity and appropriateness of text on font, sizes and readability
7. Orderliness of organisation of the contents
8. Accuracy and sufficiency of information
9. Mobility of the user in the site
10. Consistency of style throughout
11. Functionality of links
12. Customer interface and usability
13. 24/7 service delivery in multi channels
14. Timeliness of information
15. Appropriateness of illustrations

All of the above mentioned are crucial factors lead to determine the level of acceptance of eGovernment by stakeholders, as the main output of the TAM theory employed in this construct (Second level). The research refers to acceptance of both eGovernment physical infrastructure (Technology) as well as Infostructure (Contents), which refer to the layout of the information in a manner such that can be navigated, and organised in a useful fashion. What is becoming clear is that the process of putting public organisations online is much more than technology and ICT innovation. Computer systems and Internet will not undo corrupt or inefficient public institutions.

5.2.4. Examination of Strategic Framework Related Determinants:

The fourth step of the Al Bakr eGovernment Implementation model emphasises on the strategic framework adopted by Dubai Government in the context of aligning eGovernment initiatives to the surrounding environment. This component suggests using the SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis and PESOTLED (Political, Economic, Social, Organisational, Technological, Legal, Environment and Demographic) determinants to evaluate the current status of Dubai eGovernment and its preparedness. There are a number of key strengths that boost the development of the

eGovernment. On the other hand, there are internal weaknesses that once overcome, dramatically improve the acceptance level of the eServices provision. Proponents and critics of eGovernment recognise that there are variety of opportunities and threats involved with successful implementation of eGovernment project. As summarised in **Table 40**, a SWOT analysis measures eGovernment implementation and PESOTLE analyses the implementation environment. The variables in this table are situational and changing consistently in rapid manner. The researcher argues that speed, focus of unstoppable momentum can make Dubai eGovernment succeed by identifying the winning conditions particularly if it is significant incremental change, allowing society's members time to adjust to a certain set of conditions. The deeper the level of change that is desired, the more important it is to recognise critical factors and change strategy to be formulated to successful implementation.

The gathering and analysis of literature relevant to E-Government have resulted in identification of key factors/ challenges towards a successful transformation of eGovernment. These factors/ challenges culled from relevant literature include: first, ICT Infrastructure (E-Readiness, telecommunication infrastructure); second, policy issues (legislation); third, human capital development (skills, education and learning); fourth, change management (culture, resistance to change); fifth, partnership and collaboration (public/private partnership, community and network creation); sixth, strategy (vision, mission); seventh, leadership role (motivate, involve, influence, support).

These factors/challenges are also incorporated in the questionnaire-survey as indicators to measure their importance as perceived by the respondents. The results of the survey shows that indicators “ICT Infrastructure”, “Human Capital Development” and “Leadership Role” are rated as **very important**, hence, must be stressed in the implementation of eGovernment initiatives. This does not mean, however, that Dubai eGovernment challenges are primarily technical. Thorough analysis and diagnosis of PESTLED help in establishing a shared understanding of SWOT' analysis among eGovernment leadership team- a sense of vision, success measures, key programmes and projects, and of the change process itself.

Table 40: Summary of SWOT and PESOTLED analysis of eGovernment

SWOT/ PESOTLE	Strength (S)	Weaknesses (W)	Opportunities (O)	Threats (T)
Political	<ul style="list-style-type: none"> • Leadership Vision • Support and willingness • Public Policy • Country's Competitive Edge • Rule of Law • Funding the initiative 	<ul style="list-style-type: none"> • Mutual understanding • Political Effects • eDemocracy features • Media and Public Relationship management 	<ul style="list-style-type: none"> • Local, Federal, regional and global initiatives • Good Governance • Sustainable Development • Anti-Corruption Drive 	<ul style="list-style-type: none"> • Regional Political Instability • Sharing power with Non-state Actor • Method of Government income
Economic	<ul style="list-style-type: none"> • Stable & Strong • Dubai Economic Policy • Financial Resources • Multinational Corporation 	<ul style="list-style-type: none"> • ICT Business Application • Cost of eServices • Return on Investment (ROI) 	<ul style="list-style-type: none"> • Cost Reduction • Reduction of travel costs, and road congestion • Reduction of processing time of transactions 	<ul style="list-style-type: none"> • Higher service cost • High Broadband cost
Social	<ul style="list-style-type: none"> • Educational System • ICT Savvy Population • Combat Digital Divide • Two-way-communication with leaders • Right Attitude toward change 	<ul style="list-style-type: none"> • Promotion Programme • Social awareness • User Trust • Digital Divide • Fading face-to-face interaction • Continuous Education 	<ul style="list-style-type: none"> • Education enhancement programmes • Public Private Partnership • Social Prosperity 	<ul style="list-style-type: none"> • Resistance to change • Invasion of Privacy
Organisational	<ul style="list-style-type: none"> • Business Processes • Resources, Assets and People • Culture of shared vision • Competitive Advantages • Distributed Project Management • Cross-departmental Collaboration 	<ul style="list-style-type: none"> • Sustaining Internal capabilities • Loss of Key Staff • Structure of Services • Awareness of the Services • R&D in E-Government • Customer Responsiveness • Incentives and Rewards 	<ul style="list-style-type: none"> • Boosting Openness and Efficiency • Change management • Dubai Government Excellence Programme • Service Delivery Channels • Inter-governmental relation harmony 	<ul style="list-style-type: none"> • Vulnerabilities • Fraud and Corruptions • Horizontal and Vertical Integration • Loss of Credibility • Loss of Trust in eGovernment as an approach to change
Technological	<ul style="list-style-type: none"> • Advance Based Government • Innovation and Infrastructure • ICT Readiness • Decentralized Model of eGovernment Interaction • Surveillance and Security 	<ul style="list-style-type: none"> • Limited and expensive bandwidth • Contents look and feel • Legacy Systems • Call centres • Lack of Customer Centric Portal • Design –Reality Gap 	<ul style="list-style-type: none"> • PKI technology • Biometric Technology identity management • Re-use technology • Reduce overall infrastructure costs • Single Gateway to Government Services 	<ul style="list-style-type: none"> • Rapid Changing Technology • Poor Project Management • Dependency on ICT • System Blackout • Hacking, Spamming and Virus attacks
Legal	<ul style="list-style-type: none"> • Famous as Law and Order Government • Legislation Environment • E-Commerce Law • E-Law Initiatives 	<ul style="list-style-type: none"> • E-Commerce Legislation • Computer & Internet Security • Legal Loopholes • Legislative Authority 	<ul style="list-style-type: none"> • Accountability • Transparency • Accessibility • Reduction of fraud and corruption 	<ul style="list-style-type: none"> • Undefined cross boarder jurisdiction • PKI • Digital & Internet Crimes • Conflict of Laws • Security and Privacy
Environment	<ul style="list-style-type: none"> • Citizens Awareness • Environmental issues • Global factor • Green Technology and infrastructure 	<ul style="list-style-type: none"> • Seasonality and Weather Effects • Green Technology and Climate change 	<ul style="list-style-type: none"> • Reduce paper use • Less redundancy • Dubai Green Community Initiatives • Green & Smart ICTs • Combating climate change 	<ul style="list-style-type: none"> • Conformity with Environment law • Natural Crises
Demographic	<ul style="list-style-type: none"> • ICT penetration & Access • Positive Attitude • Participation of Young Citizen • Good Income • Highly Educated • Family structure 	<ul style="list-style-type: none"> • Cultural Background • Heterogeneous society • Religious beliefs • Workers and older generation are computer Illiterate • Lack of Information about expectations 	<ul style="list-style-type: none"> • Social Network • eParticipation • participants willingness • Mode of Interaction • Personalisation 	<ul style="list-style-type: none"> • Melting of social status and Power • Loss of Moral of Stakeholders • Low Level of E-Readiness at some customer levels.

As discussed earlier in chapter two, there are some negative aspects of implementation of eGovernment that arise from serious contradictions. Technological development in ICT is accelerating and without doubt the benefits to the society have been massive and persuasive. For example, this includes the sophisticated surveillance technologies and a powerful government eager to take advantage of it make a dangerous combination – a receipt for continuous mass surveillance. While surveillance can be valuable law enforcement tool in Dubai, it also poses a significant threat to the legitimate freedoms to express what we believe, to do what we want to do, to be the type of person we really are. Accordingly, the study debates that government use of communications, physical and transaction surveillance should be closely watched and subject to meaningful regulation. Furthermore, because of surveillance can drastically alter the relationship between the government and its citizens. According to *Digital Governance in Municipalities Worldwide* (2007), Dubai, New York and Lima were all ranked the tenth position in privacy and security criteria.³²²

While Dubai eGovernment standards are still emerging, a plan for access by all facets of society members is an important factor in eGovernment diffusion strategy which addresses access to eServices by citizens and customers. This includes people with disabilities as well as multi-lingual access. Additionally, this part of strategy addresses issues of access to disadvantaged segments of society. Building interactions within the civil society of Dubai is part of the awareness programme to enhance the knowledge of all customers about the transformation. However, there are observations that the eGovernment authorities of Dubai did not fully subscribe to the Sheikh's vision and made a different turn in the directions of eGovernment where they thought it was supposed to be. According to an article "Lt. Gen. Dhahi Khalfan Tamim: eGovernment's Task is not to Transform Everybody into eCustomers", Lt. Gen. Dhahi Khalfan Tamim, the present Dubai Police Chief, says that Dubai eGovernment should change its directions and promote eServices largely to educated segment, especially business persons and believes that those responsible for the eTransformation are too ambitious in regard to application. Though many departments have achieved 90% of eTransformation of their services, the adoption, however is still beyond the desired levels.³²³ Tamim claimed that "those responsible for the eTransformation had very

³²² Marc Holzer, Seang-Tae Kim, *Digital Governance in Municipalities Worldwide, A Longitudinal Assessment of Municipal Websites Throughout the World*, (USA: The E-Government Institute, NCFPP, the State University of New Jersey 2007)

³²³ Lt. Gen. Dhahi Khalfan Tamim: eGovernment's Task is not to Transform Everybody into eCustomers. *e4all*. 65, 2009. 2-4.

high expectations and the success factors and adoption criteria they adopted were exaggerated”. He explained further that “a significant portion of the work force has limited education and it is illogical to ask them to use eServices”. He said “those responsible should have carefully outlined the different segments of the society and directed the eServices and the associated awareness programmes to the segment most interested in the electronic transition, i.e., the literate and educated people who can actually benefit from eServices”. He further added that “departments should keep the traditional counters open to serve those who are unable deal with the internet or modern day technologies”.³²⁴

He concluded that “transforming all members of the society into electronic customers is not the task of the eGovernment. This is a difficult task which requires great and strenuous joint efforts from the Ministry of Education, universities and other institutions. To be more precise, Dubai eGovernment should not turn eServices into obligatory practices. The role of the eGovernment and other government departments related to the eTransformation should end at transforming the service into the electronic form in a simple way, ready to be used whenever the customer is ready”. In his assessment of eTransformation in general after 8 years of Dubai eGovernment, he said “he was not satisfied with the way eGovernment started its services. He hoped that all local government departments would have met and defined the common services and given the priority to transforming them into eServices. After that, we could have looked at individual services. This would have helped the customers complete their transactions at one place without having to visit different departments. It means saving customers time and effort and reducing the work load of the staff at the departments. This integration of the services is the solution to providing rapid services and facilitating people’s lives. This is the mission of the eGovernment and its core business, but this hasn’t been done well so far. Dubai eGovernment should quickly take the necessary steps to ensure the linkage and electronic integration among Dubai government departments to ease the lives of both the customers and the departments”.³²⁵ We can note well that Lt Gen. Tamim has raised several key issues in the implementation of eGovernment in Dubai. The first is the promotion of eServices largely to an educated segment, especially business persons. Second, a careful outline of the different segments of society should have been made and directed the eServices and the associated awareness programmes to that segment most interested in the electronic transition, i.e. those literate and educated people who can actually benefit from eServices. Third, the transformation of

³²⁴ Ibid.

³²⁵ Ibid.

all members of society into electronic customers is not the task of the eGovernment. This is a difficult task which requires great and strenuous joint efforts from the Ministry of Education, universities and other institutions. Dubai eGovernment should not turn eServices into obligatory practices. Hence, the pivotal role of the eGovernment and other government departments related to the eTransformation should end at transforming the service into the electronic form in a simple way, ready to be used whenever the customer is ready. Fourth and lastly, all local government departments would have met and defined the common services and given the priority to transforming them into eServices.

The UAE and Dubai in particular heavily relies on non-nationals/expatriate labour supply to meet workforce need for both skilled and unskilled labour. Foreign workers dominate in the workforce because of the relatively small population base from rapid economic growth and because of nationals' relatively low rate in the labour force. Expatriate workers work under employment contracts which are of limited duration and may be renewed multiple times thus prolonging the stay in the country, or work on short term work visa and permanent residency status for property owners and business investors. However, expatriate migrants cannot gain citizenship and permanent residency is discouraged on the account of social and cultural reasons. Work visa are generally issued until the age of sixty years.³²⁶

Another challenge of E-Government implementation is the Government Responsiveness. The researcher finds that ICT sometimes helps in reducing the responsiveness of Government in many cases. For example, it is easier to ignore an email than a human being. Electronic interaction with government cannot be allowed to become a way for government employees to be less responsive to customers. Public servants become less responsive because they are not physically interacting with customers they serve. As a result, eGovernment would be serving to make government administration less transparent and responsive. In some cases, eGovernment and ICT have the potential to become a standardised excuse as an explanation for all problems.

As explained above, the researcher proposed this step as a formidable undertaking to evaluate eGovernment on political, economic, social, organisational, technological, legal, environmental and demographic perspectives of status of SWOT of eGovernment

³²⁶ Al Ali, J, *Emiratisation: Drawing UAE Nationals into their Surfing Economy*, International Journal of Sociology and Social Policy, pp 28, 365-379

implementation as the fourth input towards the successful eGovernment implementation strategy.

5.2.5. eGovernment Initiatives Impact Assessment

The fifth level of Al Bakr eGovernment Implementation led to the recognition of impact of eGovernment on the development of Dubai. Dimensions of assessment cover stakeholders namely: Government (G2G), Businesses (G2B), and Citizens (G2C). These impacts are also incorporated in the questionnaire-survey and rated by respondents on their significance. Some of the questions framed as the degree of improvement resulting from the implementation of eGovernment. These include cost reduction, efficiency gains, quality of service delivery to clients, transparency, anti-corruption, accountability, increased capacity of government, network and community creation, improved quality of decision-making, and promoting use of ICT in other sectors of society. The results indicate that with the exception of the indicator “Cost Reduction” as moderately significant, all others are rated as significant. Therefore, the fifth step measures the impact of eGovernment on government and civil society as a whole, however, once these improvements are met, a new set of hierarchy of needs will keep emerging over time with regard to finding solutions to problems and motivating factors.

5.2.6. Global Best Practices

The sixth and last component of the Al Bakr eGovernment Model of Implementation is Best Practices which draws together the best practices of top ranking countries featured in Chapter 3 as well as the latest advances in eGovernment implementation in the world. Some Best Practices that are significant in the implementation of eGovernment initiatives include biometrics technology, people-led approach to eGovernment, user help and service navigation, provision of emergency plans or crisis management plans for eGovernment, single sign-on portal, and improvement of marketing and promotion through DOI and improvement of content management systems. Performance management is a key factor in measuring progress of the transformation process and implementation success. Developing methods and key performance indicators and criteria.

5.2.6. 1. E-Authentication, E-Identification and Biometrics Technology

With identity fraud and theft, a country will need to institute new means of authenticating and determining access by users to a country's systems that goes beyond the time-worn user ID and password approach. According to Rocheleau in his work *Case Studies on Digital Government*, this will have to include investments in biometrics and other software.³²⁷ Government implementing E-Government initiatives should have reliable personal recognition systems to either confirm or determine the identity of individuals attempting access. This is to ensure that those services are available only to rightful and lawful users. When a system lacks a sturdy and secure personal recognition, the system is vulnerable to the shenanigans of a technology-savvy criminal. According to Jain, et al, in their book *An Introduction to Biometric Recognition*, biometric recognition, or simply, biometrics, refers to the automatic recognition of individuals based on their physiological and/or behavioural characteristics. By using biometrics, it is possible to conform or establish an individual's identity based on "who he is", rather than by "what he possesses) (e.g. an ID card) or "what he remembers" (e.g. a password).³²⁸ Digital Identity, smart identity cards, digital certificate are examples from the case studies of the top ranked countries analyzed in chapter 3, in implementing appropriate security control.

Micki Krause and Harold Tipton, in their book *Handbook of Information Management*, identified several important factors for a biometric system to be effective. These include accuracy, speed and throughput rate, acceptability to users, uniqueness of the biometric organ and action, resistance to counterfeiting, reliability, data storage requirements, enrolment time, intrusiveness of data collection, also subject and system contact requirements.³²⁹ It can be inferred that the purpose of the biometric system is the positive identification of a person. Hence, the system should be based only on a unique physical characteristic where there is no replica or duplicate in the world. This provides confirmation that the input base is a unique characteristic that can match a positive on-database identification rather than a probability that this is the right person. According to Krause and Tipton, there are only three physical characteristics used for biometric

³²⁷ Rocheleau, B. ed. *Case Studies on Digital Government* (US : Idea Group Incorporated, 2007), 40.

³²⁸ Jain, A. et al. "An Introduction to Biometric Recognition", *Circuits and Systems for Video Technology*, **14**, 2004, 4-20.
http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?tp=&arnumber=1262027&isnumber=28212 06.05.2009.

³²⁹ Krause, M. and Harold Tipton. *Handbook of Information Security Management*.
<http://www.cccure.org/Documents/HISM/ewtoc.html> 06.05.2009.

identification that are unique: the fingerprint, the retina of the eye (i.e. the blood-vessel pattern inside the back of the eyeball) and the iris of the eye (i.e. random pattern of features in the coloured portion of the eye surrounding the pupil).³³⁰

5.2.6. 2. People- Led Approach to E-Government: Involvement of Stakeholders

Fairhead, in his article “People-Led Enterprise Architecture”, emphasised, a *people-led approach*³³¹ in considering all aspects of the enterprise architecture of E-Government. This means that there should be a synchronicity of the people’s will and the structural systems in the establishment of an E-Government system. . Fairhead also pointed out that “unless there is an explicit alignment between interests of the stakeholders and the proposed architecture, there is a high probability that the value of the enterprise architecture programme will fail to be understood and realised”.³³² This people-led approach by Fairhead denotes a stakeholder management where stakeholders are those managing the team or authorities responsible for the E-government. This approach also means that that the customers are those leading and involving the whole of the builder community and addressing the needs of the users.

The pursuit of E-Government boils down to the procurement of greater public service. Hence, this pursuit which defines the purpose (why), the approach (what) and the plans (how) should not only be intuitive but also address the motivation and acceptance of stakeholders. Lastly, according to Fairhead, a people-led approach should lay emphasis on quality assessment, that would engage more directly with stakeholders, by tuning in to their requirements and needs, which should have been identified at the start of the enterprise, which in turn will lead to plans for the enhancement of enterprise architecture capability in line with stakeholders’ needs and better serve them over time.³³³ The lesson learnt from the best practices is the clustered approach employed by pioneering countries in centering on customer needs end-to-end services and the customer centric approach in all design and deployment of the eServices.

³³⁰ Krause and Tipton. Ibid.

³³¹ Fairhead, N. “People-Led Enterprise Architecture”. *Advances in Government Enterprise Architecture*. ed. Pallab Saha. UK: IGI Global, (2009) 285-287.

³³² Ibid. 298-291.

³³³ Ibid. 301-307.

5.2.6. 3. User Help and Service Navigation

According to Stowers, in his work *User Help and Service Navigation Features in Government Websites*, the user help and service navigation features in government websites are critical for ensuring that users unfamiliar with government are able to successfully and easily access e-Government services and information.³³⁴ It should be noted that when users have access to the Internet and learn how to operate computers, they still have to understand how to navigate websites and find the information or services they need. Ease of use and perceived usefulness are usually enhanced by training and awareness training programmes. This would also mean that Dubai government's customers have to understand how to interact with the website so that they can access those services. Governments then need to provide more proactive user help features, service navigation features and organisational structures to actively assist users in finding information and services, otherwise they create a second digital divide, one between those who understand website structure and organisation structure and those who do not.

Stowers also pointed out that the integration and development of user help and service navigation features that includes systematic usability testing is crucial if government is really intent on effectively utilising E-Government and providing electronic services.³³⁵ Hence, this means a focus should also be put upon the differences still existing between classes of users due to their access to computers and the Internet. Apparently, the inability of some groups of users to access E-Government services reduces the utility of these services. However, it should be recognised that another digital divide exists. Even if users have access to computers and the Internet, in order to fully utilise E-Government services, they need government agency Web sites that can be understood and navigated successfully by everyone, not just by those who have knowledge and understanding about how government agencies and services work and are organised. Effective user help and service navigation features can remove this second divide by allowing novice users or users unused to contacting government to understand and fully utilise E-Government services and information, so not creating the other digital divide.

³³⁴ Stowers, G. "User Help and Service Navigation Features in Government Websites". ed., Donald Norris. E-Government Research: Policy and Management. US : IGI Publishing, (2008) 141.

³³⁵ Ibid 150.

Table 41**User Help Features³³⁶**

User Help Features	
Feature	Explanation
Easiest and Requires Fewest Resources to Implement	
About the Site	Link to Information about the site
Contact Us	Information and Links to allow the user to contact the agency for more information of for help with the site
FAQs	Includes answers to Frequently asked questions
Feedback	Invites users to give them feedback about the site
Help	Explicit agency-provided help with the site
Index	An index of Information, data, and agencies available.
Search	Search engine to allow users to search the site
Sitemap	Visual representation of the entire web site
User tips	Helpful hints on how users can use the site
More Technically Difficult or Resource-Heavy To Implement	
Live Help	Links to live chat with agency representative to provide assistance
Other languages	Site provides information in other languages
Text version	An alternate site is provide in text

Table 42**Service Navigation Features³³⁷**

Service Navigation Features	
Feature	Explanation
Agency Information	Listing of all agencies in directory form
Answer A to Z	Alphabetical listings of answers to questions
Calendars	Calendars of government activities and events
Contact Information	Linkages to direct contact information for agencies
Do you know how I	List of questions organised according to major service areas from

³³⁶ Ibid 145.³³⁷ Ibid. 147

do ___..?	the citizen's point of view, stating "how I do x or y?"
E-Government Services	Direct link from home page to all E-government services
Events	Link to information on major events
Facilities Locator	Direct linkage to way to locate government offices
Featured link/spotlight	Many sites have featured programmes or linkages
Hot topics	Link to information on what are considered currently important issues
Most Visited/ Frequently requested site	Links to or listing of the most frequently visited sites, indicating the importance of that information
Popular Service/ Major Programmes	Highlighting of popular services or major programmes
Quick links	Listing of the commonly asked questions in prominent format
Special Initiatives	Current, new, or special initiatives from the agency
What's new	Listing of new items posted on the site

5.2.7. 4. Provision of Emergency Plan or Crisis Management Plan for eGovernment

Crucial to the implementation of eGovernment initiative is the provision of emergency plans or crisis management to sustain eGovernment operations and delivery of eServices. When eGovernment is embraced by the Emirate of Dubai, it augurs a government that never sleeps and has 24/7 governmental operations and availability of eServices anytime, anywhere. Though it cannot be avoided that a website or portal has maintenance work to update its content or upgrade its features, it should not, however, be the reason for blackouts or suspension of eGovernment or eServices. According to the *e4all* report *Blackouts of Dubai Government Department Websites*, several websites of Dubai eGovernment in 2008 experienced blackouts and posted websites greetings: "The website is not available now due to maintenance work. Sorry for the inconvenience". The eGovernment magazine further stated that the "message remained displayed for several days, before the website was finally made available to users again".³³⁸ We can easily understand that the initial adopters of the eGovernment innovation, particularly eServices,

³³⁸ "Blackouts of Dubai Government Department Websites"
e4all. 54, 2008. 6.

were greatly dismayed and frustrated by this cul-de-sac as there is no clear emergency plan for such incidents. The blackout of several important government websites has frustrated many users with some of them comparing the situation to roads which remain temporarily closed due to maintenance works. However, despite the similarity, the big difference is in case of roads, there are alternative routes to be used. But in the case of a website, the users are left with no option. These government websites or portals have many vital eServices that includes fine payments, issuance of licenses that could result in penalties for payment delays. It should be pointed out that the sustainability of eService or eGovernment operations is linked to Dubai's reputation and any blackout of any eGovernment component website gives a negative impression of the performance of government departments which directly represent Dubai in their transactions to its stakeholders and will tarnish Dubai's name as a centre for excellence.

5.2.7. 5. The EUI Criteria of E-Readiness as Guide towards Digital Transformation

In chapter two, this study has discussed E-Readiness. According to EUI, it refers to the measure of a country's ability to leverage digital channels for communication, commerce and government, in order to boost further economic and social development³³⁹. To measure E-Readiness, EUI used the following categories as criteria that includes connectivity and technology infrastructure, business environment, social and cultural environment, legal environment, government policy and vision, consumer and business adoption. Chapter three of this study has identified, studied, and the best practices of top-ranked countries that have performed in the EIU E-Readiness rankings. The researcher proposes that these criteria should be a guide towards the E-Readiness of Dubai as well its pursuit of a more successful implementation of eGovernment.

5.2.7.6. Developing Methods and Key Performance Indicators

In the context of E-Government implementation, Dubai Government is expected to provide high-quality services, more efficiently, effectively and customer centric eServices, given that resources are shrinking and citizens and businesses needs are more pressing and complex. In order to measure and evaluate the success of eGovernment initiatives, public sector officials and policy makers must evaluate the costs and benefits of their investment

³³⁹ E-Readiness.

http://e4all.dubai.ae/content/view/520/lang,en_US/ 25.09.2008

at every step of their project to demonstrate how their eGovernment plans are supporting the achievement of government strategic plan, demand, benefits and eService quality and information behaviour that inhibit the use of eGovernment in the local context. The researcher recommends defining every process of eGovernment implementation as well as indicating inputs, outputs and indicators which focus on how best to measure performance.

5.3. Conclusion

This chapter lays down the proposed Al Bakr eGovernment Model of Implementation as a programme to achieve a successful implementation of Dubai eGovernment. The formulations has been anchored on the salient findings of the research study presented in Chapter 4, the best practices of top ranked countries performing well in eGovernment implementation across the globe in Chapter 3 and the discussions of models and concepts of eGovernment in Chapter 2, and on the basis of the theoretical framework and the research methodology and design described in chapter 1.

The proposed model, in the form of a rocket-ship, outlines key processes of the programme to achieve a successful eGovernment implementation that include, first, the examination of Bureaucratic structure of government as the foundation of the model. Second step is examination of factors influencing eGovernment Implementation. This process includes measuring two important performance indicators namely: level of completion / eTransformation status; and level of diffusion of innovation related to eGovernment systems. The third level of the implementation model concentrates on monitoring and assessing the status of eGovernment implementation in terms of Technology Acceptance. In this research, the proposed model suggests that user acceptance of eGovernment is affected by: 1) perceived usefulness and 2) perceived ease of use. The output of combining the two indicators render the dependant indicator of the level of eGovernment acceptance in Dubai. Fourth step of the proposed model is the examination of strategic framework related to Dubai eGovernment initiatives. This process uses SWOT analysis with PESOTLED dimensions. Fifth step of the proposed model aims to carry out impact assessment of eGovernment. The outcomes from this step determine a set of significant qualitative goals and targeted benefits, corrections for projects under implementation; and all key determinants of economic, organisational, and social impact from successful and failed projects. The sixth and last step in the proposed model of implementation is the identification of best practices, standards and strategies in E-Government around the world

among the top ten countries based on EIU ranking criteria. To sum up, the model is designed to be comprehensive and practical enough to take on board the needs, requirements and aspirations of both the provider and users so as to avoid the errors and failings identified in the empirical research. These insufficiencies and failings, we may note, are not unique to Dubai, as they were experienced by the more advanced countries which continue to be challenged by them.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

6.1. Introduction

The researcher arrived at the following conclusions and recommendations as guided by the research problems in Chapter 1 and drawn from the findings of the study in Chapter 4. This study generally seeks to determine the important considerations of Dubai with regard to eGovernment. This has been formulated as six questions addressed by the research in this last chapter, namely:

- 1) What is the status of eGovernment initiatives of Dubai in terms of perceived usefulness and perceived ease of use?
- 2) What is the level of completion of eGovernment initiatives of Dubai in terms of Government-to-Customer (G2C), Government-to-Business (G2B), Government-to-Government (G2G), and Government-to-Employees (G2E)?
- 3) What is the level of acceptance of eGovernment initiatives of Dubai in terms of Government-to-Customer (G2C), Government-to-Business (G2B), Government-to-Government (G2G), and Government-to-Employees (G2E)?
- 4) What are the factors/challenges for a successful eTransformation of Dubai towards eGovernment?
- 5) What are the impacts/opportunities of eGovernment initiatives in the development of Dubai?
- 6) What model may be formulated to achieve a successful implementation of eGovernment in Dubai?

6.2. CONCLUSIONS

6.2.1. eService/eGovernment.

Most of the citizens/customers and business employees as compared to all government employees have availed or use eService/ eGovernment of Dubai. Furthermore, most of the citizens/ customers and business employees have access to published information, or search for information or disseminate information; fill up forms online or email feedback and inquiries or participate in online forums and bulletin boards; and made ePayments or eProcurements or E-Registrations. All Government employees, however, have accessed published information, or searched information or disseminated information; filled up forms online or emailed feedback and inquiries or participated in online forums and bulletin boards, and made ePayments or eProcurements or E-Registrations and most of them perceived that they have personalisation/customisation of eServices or Web services. However, most citizens/ customers and business employees felt that they did not have personalisation/customisation of eServices or Web services.

6.2.2. Status of eGovernment initiatives in terms of Perceived Usefulness and Perceived Ease of Use.

On perceived usefulness, citizens/customers, business employees and government employees find **very useful** the “more flexible working hours” and “greater information sharing across the government”. The following are rated **useful** : “reduction of fraud and corruption”, “reduction of travel costs and road congestion”, “reduction of needed physical presence, “reduction of processing time of transactions”, “time saving of public servants”, “reduction of error-rates, rework and complaints”, “reduction of the need for multiple collections from the customer”, “more accurate, up-to-date and reliable data and information”, “improve security – no security breaches”, “less redundancy through integrated services”, “reduction of user time (hours saved)”, and “transparency of processes and transactions”. All the respondents found the “price reduction of service charges” **moderately useful**. Overall, the perceived usefulness on eGovernment by all respondents is **useful**.

On perceived ease of use, citizens/customers, business employees and government employees found it **easy to use** the “sufficiency and overall content of the directory”,

“pleasantness of the overall look”, “appropriateness of vocabulary language”, “correctness of grammar and spelling”, “clarity and appropriateness of text on font, sizes and readability”, “orderliness of organisation of the contents”, “accuracy and sufficiency of information”, “mobility of the user on the site”, “consistency of style throughout”, “functionality of links”, “customer interface and usability”, “24/7 service delivery in multi-channels” “timeliness of information” and “appropriateness of illustrations”. However, respondents found it **moderately easy to use** “the easiness of overall navigation”. Overall, the perceived ease of use of eGovernment by all respondents was that it is **easy to use**.

6.2.3. Level of Completion of eGovernment.

The indicators that the “website portal provides accurate, up-to-date, and relevant information to customers”, “website portal allows information queries and forms to be completed on-line on government services”, “website/ portal allows an exchange of value as government agencies interact directly with clients on-line, including recording, and storing sensitive information” are perceived as **largely completed**. These three indicators correspond to the first three stages of eGovernment, namely, posting of information, two way communications, and exchange of value. However, the “website portal integrates government services is based on needs and functions, and not on departments or agencies”. This correspond to the last stage of eGovernment which is **half completed**.

6.2.4. Level of Acceptance of eGovernment.

Citizens/customers, business employees, and government employees recognise the benefits of eGovernment and consent that all stages in its development should be accomplished and implemented. All the indicators that the “website portal provides accurate, up-to-date, and relevant information to customers”, “website portal allows information queries and forms to be completed online on government services”, “website/ portal allows an exchange of value as government agencies interact directly with clients online, including recording and storing sensitive information” , and the “website portal integrates government services based on needs and functions, and not on departments or agencies” are all **accepted**.

6.2.5. **Factors/ Challenges a Successful eTransformation of Dubai.**

The indicators “ICT infrastructure”, Human Capital development”, and “Leadership Role” are rated as **very important**. On the other hand, “Policy Issues”, “Change Management” “Partnership and Collaboration”, and “Strategy”, are considered as **important**.

6.2.6. **Impact/ Opportunities of eGovernment Initiatives Towards the Development of Dubai.**

The indicators “efficiency gains”, “quality of service delivery to clients” “transparency, anticorruption, accountability”, “increase the capacity of government”, “network and community creation”, “improve the quality of decision making” and “promote the use of ICT in other sectors of the society” are rated as **significant**. On the other hand, the indicator “cost reduction”, is rated as **moderately significant** with a weighted mean of 3.06.

6.2.7. **Model to achieve a successful eGovernment of Dubai.**

Anchored on the research focus, analysis of relevant literature on best practices as well as findings, and conclusions of the study, the researcher proposes the Al Bakr eGovernment Model. This paradigm in the form of a rocket ship signifies six key components in the successful implementation of eGovernment, namely: 1) Theory of Bureaucracy, Diffusion of Innovation and Level of Completion, Technology Acceptance Model, factors/challenges towards a successful eTransformation of Dubai, impact/opportunities of eGovernment towards the development of Dubai and E-Government Best Practices.

6.3. RECOMMENDATIONS

6.3.1. Integration and Customisation of eServices.

A comprehensive analysis of the most common eServices availed of and with inputs of the process from interlinked providers of these services (government departments) should be undertaken. The customisation or personalisation of these services should also be started. The implications of each component of the suggested model discussed earlier have to be considered for a robust eGovernment design.

6.3.2. Diffusion to Government Employees and Business Employees.

Taking into account the findings and DOI theory, government employees and business employees should be the groups targeted for the campaign and dissemination of eGovernment, then subsequently followed by the private sector or citizens/ customers. Prioritising the target audience of eGovernment is an important factor in diffusion of eGovernment.

6.3.3. Fee Reduction of Service Charges.

The charges for the eService should considerably be reduced. The findings of the study indicate that price reduction could be moderately useful and its impact/ opportunity is moderately significant as the fees of eServices are more expensive than the manual services.

6.3.4. Easiness of Overall Navigation.

Overall navigation is moderately easy to use as revealed in the findings of the study. This feature should be further enhanced taking into consideration the inputs of stakeholders and establishing the best practices on its implementation.

6.3.5. Completion of Stages of eGovernment.

The first three stages are perceived to be largely completed while the last stage is half completed. The eGovernment team and the IT divisions of government departments should establish the total completion of the first three stages of eGovernment, that is, the website/portal providing accurate, up-to-date and relevant information to customers, the website/portal allowing information queries and forms to be completed online on government services, and the website/portal allowing an exchange of value as

government agencies interact directly with clients online, including recording and storing sensitive information. The last stage should also be sought to be largely completed if not totally completed where the website/portal integrates government services based on the needs and functions and not on departments or agencies.

6.3.6. Al Bakr eGovernment Model of Implementation.

Anchored on the salient findings of the study, analysis of relevant literature and best practices, the Al Bakr eGovernment Model is particularly suited to the e-Transformation of Dubai and is proposed that it be followed.. The paradigm suggests that to effectively implement an eGovernment of Dubai the following components should be taken into consideration, namely, the structure of Bureaucracy, factors influencing implementation, the status of implementation (TAM), the strategic framework of implementation, eGovernment impact assessment, and E-Government best practices, which include:

- E-Authentication and Biometrics Technology
- Involvement of Stakeholders
- Improvement of User Help and Service Navigation
- Provision of Emergency Plan or Crisis Management Plan for eGovernment
- Single-Sign on eGovernment portal
- Unified E-Payment Gateway
- Improvement of Marketing and promotion through DOI
- Improvement of Content management systems.
- The EUI Criteria of E-Readiness as Guide towards Digital Transformation

To sum up, this study has examined the evolution and impact of the emerging E-Government concept and applications as well as its potential for the future, not only in the Emirate of Dubai, but also in other countries in the region and beyond.

This case study has been placed in a wider regional and global context, where issues of technology merged with issues of development, democracy, good governance and transparency. The thesis through empirical research has identified levels of public awareness, receptiveness and satisfaction as well as barriers to eGovernment but also in some select countries in the world and one country, namely, Bahrain, in the Gulf region. . As a result, Al Bakr eGovernment Model of Implementation was designed to ensure a

more effective, efficient and humane programme to achieve a successful implementation of eGovernment in Dubai. It is hoped that this study will inspire other researchers to examine other E-Government models within the UAE and among other Arab Gulf states for similarities and differences as well as, hopefully at some point in the future, better synergy and coordination between them.

6.3.7. Legislation and Information Security of eGovernment :

One of the aims of the Dubai Technology Electronic Commerce and Media Free Zone (DTECOM) is to advise the Government of Dubai in connection with the development of appropriate laws and regulations relating to, among other responsibilities, data protection, intellectual property rights and cybercrime. This freezone includes Dubai Internet City and Dubai Media City. The researcher finds it not appropriate to assign this role to such an authority due to business activities that the TECOM is mainly focused on establishing investments and eTrade relations & platform for E-Commerce. There are some initiatives by Dubai Police to deal with Computer & Internet Crime. There does not appear to be law in Dubai or the UAE covering privacy protection. The researcher recommends that Dubai eGovernment Department start addressing these issues of data protection more thoroughly.

6.4. Recommendation for Future Research:

Towards the end of this thesis, future research recommendations stood out as going beyond the present research scope and linking it to the wider world and/or to future research. There are two different kinds of recommendation being made in this thesis and in the corpus as a whole, so it was decided to differentiate them as two separate moves:

- *Practical Applications, implications or recommendations(P)* which concerns real world uses for the research or advice for real-world situation springing from the findings headed as practical Implications and
- *Recommendation for Future Research (FR)* which indicates the future avenues for research as essential theoretical implications towards enhancing theoretical framework of Digital Governance

The findings of this research study provide the following insights for future research especially in the problems involving a lot of unknowns such as the following:

- 6.3.7. Future research required to boost the E-Government Research and Public Administration to improve concrete interaction between them in the Arab world and the GCC region by establishing a sustained coordination and exchange mechanism between government policy-makers and research community for regional E-Government initiatives.
- 6.3.8. The thesis conclude that the current E-Government research does not offer adequate clarity on the issue of how eGovernment and Bureaucracy impact each other in a reciprocal way; and calls for a future research into these interdisciplinary issues at the micro-level implications including: education, health, security and justice, social welfare, immigration, transport, industry, business and commerce, and telecommunication .
- 6.3.9. The thesis raises the questions for scholars and researchers about how should government be run given the existence of ICT? Or given the existence of ICT, what is the nature of governments?
- 6.3.10. Under the umbrella of E-Government, the thesis raises the question to scholars and researchers about the future extent of proper scope of Government. The question raised is when should a government provide a service in-house, and when should it contract out provision? Where in E-Government model, does eGovernment stop? Future Research may illustrate the problem by considering changing role of government, its ownership and its sovereignty?

- 6.3.11. Future Research should focus on how Dubai develops Government-to-Government (G2G) faster ties at the macro-level and among the state's federal and local authorities as well as the global economy.
- 6.3.12. The future of E-Government requires customer involvement and participation. Further research should focus on practical implication and applications on user-centric eGovernment to user-driven approach.
- 6.3.13. Furthermore, continued studies are needed to examine legal issues including:
- 6.3.13.1. Security and Privacy standards
 - 6.3.13.2. Data collection, exchange and protection
 - 6.3.13.3. Citizens trust and E-Government Transparency
 - 6.3.13.4. Customers Confidence with Government
 - 6.3.13.5. E-Government Intelligence Generation and Dissemination
 - 6.3.13.6. Computer and Cybercrime Law
 - 6.3.13.7. Customer Identity and E-Signature
- 6.3.14. Further Research work required to cover advanced levels E-Government Development stages with focus on transactional, Interactive and integration stages particularly with regard to personalisation of eServices.
- 6.3.15. Finally, the researcher calls for further studies concerning the huge growth in social networking and social media such as Twitters, Facebook, U-tube, and Blogs, and their implications on policy-making from social, economic and political, organisational and legal perspectives.

Appendices

Appendix no. 1

Portal of eGovernment of Dubai in Arabic and English

The Arabic Version of eGovernment of Dubai

The screenshot displays the official portal of the Dubai Government, accessed via Mozilla Firefox. The browser's address bar shows the URL <http://dubai.ae/>. The page features the Government of Dubai logo and the text "دولة دبي الرسمية الحكومة دبي" (Dubai Official Portal). The main content area is titled "أهلاً بكم في الموقع الرسمي لحكومة دبي" (Welcome to the official website of the Dubai Government). It includes a navigation menu with options for English, Arabic, and various services. The main text announces the launch of the portal as a result of a government initiative, led by the Minister of Government Affairs, Sheikh Mohamed bin Rashid Al Maktoum. It highlights the portal's goal to provide citizens with easy access to government services and information. A sidebar on the right lists various services such as passport renewal, vehicle registration, and public works. The bottom of the page shows the Windows taskbar with the Start button and several open applications, including Microsoft Office and a browser window.

The English Version of eGovernment of Dubai

The screenshot shows the Dubai Government Information and Services Portal (dubai.ae) displayed in a Mozilla Firefox browser window. The browser's address bar shows the URL <http://dubai.ae/en.portal>. The page features the Government of Dubai logo and the text "The Official Portal of Dubai Government | الوزارة المرصدة لمكتوبة دبي". A search bar is located at the top right. The main content area is divided into several sections:

- Citizens**: Dubai Updates, UAE Government Strategy, Dubai Strategic Plan, About Dubai, About Dubai eGovernment, FAQs.
- Residents**: Dubai Government Information and Services Portal. This section includes a quote: "We must ease the lives of people and businesses interacting with the government and contribute in establishing Dubai as a leading economic hub". It also mentions that services are available 24/7 for citizens, residents, visitors, and businesses.
- Visitors**: Information & services, ePayments, Tourism, Education, Health, Media, Entertainment, Employment, Transportation, Housing.
- Business**: Important links, H.H. Sheikh Mohammed.
- Home**: How to (Get a National Identity Card in the UAE, Get a driving license in Dubai, Get a Dubai visit visa for a family member, Renew your car registration in Dubai, Obtain a resident visa for your parents), Most used services (Traffic fines enquiry & payment, Electricity/water bills enquiry, Recharge Salik (Road Toll), Plan your journey with RTA's Wajhati service, Flight information from).

The browser's taskbar at the bottom shows the Start button, several open applications (Dubai Government In..., PHD dissertation, Microsoft Office ...), and the system tray with the time 5:00 PM.

Appendix no. 2

Transcript of Structured Interview with Ms. Rehab Lootah

Person interviewed: **Ms. Rehab Lootah**
E-Service Provisioning Manager,
Dubai eGovernment

Date and Time: April 30, 2009 11: 00 am

The Researcher: Today is the 30th of April on my interview with Ms Rehab Lootah. Pls. introduce yourself, then we will go to the questions.

Rehab Lootah: My name is Rehab Lootah, Senior Vice President, Business, Products and Corporate Communications of Mawarid Finance. I used to work in Dubai eGovernment. I am one of the main founders of Dubai eGovernment. Regarding the Dubai eGovernment initiatives, what is your first question?

The Researcher: Do eGovernment initiatives create a system that is useful?

Rehab Lootah: First of all, the purpose of eGovernment is to ease the life of the customer. Based on that, we are trying to start from the service. Before the transfer of service from offline to online, we started to work on the re-engineering of the service and make it easy to customers, then transfer that service to online service that are useful. By selecting the services they go to the most important services by departments and transform that service to make it easy for customers to use online.

The Researcher: Partly you answered the second question that is do eGovernment initiatives create a system that is easy to use/ effortless?

Rehab Lootah: First of all, we have to keep in mind that there are different types of services. Some of them are informative, interactive or transactional services. When we go to transactional services, these are the most important services that should be transferred to online services. There are some services based on their nature might require a visit of the

customer to the department so in this case there might be an effort in contacting the government department. Most of the services can be done online by using user name and password as identification of the customers. So, it will be easy to use and effortless if all services are provided online.

The Researcher: We go to question no. 3. Now after nine (9) years have passed since the start of the eGovernment initiatives of Dubai, what is the level of completion that eGovernment reach now.

Rehab Lootah: I think the eGovernment is going into different stages. . The first stage is providing all services online in different levels. I think in this area, Dubai eGovernment was successful to provide all services and information related to services but the level of transformation of each services might differ from department to department. But most important departments like DEWA has almost reached more than 90% services provided on line.

The Researcher: From your experiences and from testing and survey you do, I am sure you have an idea of the level of acceptance of eGovernment initiatives of Dubai.

Rehab Lootah: First, we need to define the customers for eGovernment. The customers for eGovernment are those individuals and corporates or companies. I think the individuals might be a bit difficult to convince them to go or transfer to an online services. The challenge in front of eGovernment is having more than one option. Currently, the option available is to go either online or offline. I believe some departments will start closing some counters or charging more if your coming thru the offline channels because there are more costs on the offline channels than the online. The acceptances from corporates are higher because they are highly educated, and they view time as very important. Most of the corporates prefer going online. But to individuals and because of their UAE culture, I think most of the people like to go and visit and socialise. It is more of socialisation in getting the services done through government. I believe the acceptance of eGovernment by the corporates are higher than individuals.

The Researcher You think, from your answer, what are the challenges/factors to make eGovernment initiatives more successful towards the transformation either for individual or corporate customers.

Rehab Lootah: I think the most important thing is the awareness. Awareness of what services is available online which should be between each government department and their customers. They know exactly their customers, they should inform them that their services are available online and they should provide the proper training for their customers and/or provide a user guide online. Make it very simple so that customers do not need any training to use the services. Second, I believe there is some initiatives from eGovernment when they reward customers who are transacting online. There are some winners and some draws. This activity should be continued and should be supported by the government so as to encourage the customers of the government to use the online channel. And the marketing campaigns should continue and we should have the awareness campaign in the levels of colleges because those students who are in college should know what government departments are providing these services so that when they are ready, when they go to work, or wanted to help their customers or family using these services, they go online.

The Researcher We come to the last question. What are the benefits/ opportunities of eGovernment initiatives towards the development of Dubai. I am sure all of these will lead to the development of Dubai as a business hub.

Rehab Lootah: If you think about it, the initiative of eGovernment came from the same guide who is our ruler Sheikh Mohammed. He is always thinking of the economic impact of any project. They initiated eGovernment because they have agreed that this will contribute to the economy of Dubai. So he started thinking wisely that because each transaction, each visit to department bears a huge cost on the customer and the government department. This will reduce the cost on both sides and make things easier and it will also help impact a transparent division, a transparent government.

Customers can easily conduct his transaction online without the help of any government employee. Gradually, we will feel a decentralisation of services like one centralised system for payments that will reduce the costs of all government departments. We have 23

government departments. This is one of the things that we should keep in mind. Centralising the service will affect also positively on the cost of each government and hiring. Once the services are available online, then you don't need that much employees to serve customers.

The Researcher I've seen in some of the countries in Asia, Europe and America that they have a centralised/ one office that you can get all the E-Government services from one counter, all from one window. Do you think that Dubai can reach this in the near future?

Rehab Lootah: Actually, this is a starting point, not the end. The meaning of / or the objective behind having a portal -- dubai.ae is a "one stop shop for all online services". You don't have to go to this and that. This is what we are looking for. Currently we go as a centre of service, you can services from economic departments, ministry of labor and so on. All of them are of the same place. Or you'll have one employee to serve you more or represent more than one department.

But this cannot be part of eGovernment, it just part of customer services. But not of eGovernment, I don't see the channel of e available. But what we are looking for is one stop shop of government services all online.

The Researcher: Miss Rehab. Thank you very much for your time and this opportunity.

Appendix no. 3

Transcript of Structured Interview with Mr. Salem Khamis Al-Shair

Person interviewed: Mr. Salem Khamis Al-Shair
Director General,
General Information Authority, UAE

Member of eGovernment Executive Team,
and Director of eServices for eGovernment, Dubai

Date and Time: May 24, 2009 8: 00 am

Researcher: We start our interview today, 24th of May 2009 with Salem Khamis Al-Shair. Could you please introduce yourself, then we will go to the questions one by one.

Salem Al-Shair: My name is Salem Khamis Al Shair, Director General, General Information Authority, a federal entity that reports to the Prime Minister's Office of the United Arab Emirates.

Going to the questions, the first one (Do eGovernment initiatives creates a system that is useful?).

If we look at eGovernment as a system, and that we mean the people involved in the creation of an IT project or initiative, the hardware, the software, the investment put in of such initiative, and if we look at in the government point of view, if it is useful in the sense that it did good to the government, I think the overall result is yes, it is useful. It had saved money in many areas where shared services being introduced, and are being utilised by various government entities which had reduced providing these services whether within each entity, or a government to government body relationship or to the customers whether be it individuals or customers.

If we look at the whole initiative from the customers, individuals and businesses, we also believed it had saved them a lot of time and money. The remote relationship that have

grown between individuals, business and government definitely is an attractive factor that we believe is attracting foreign investments in the UAE.

Looking at initiatives started in Dubai, being the no. 1 city in the Middle East when it comes to eGovernment evaluations that are done by United Nations and various entities, European Union and others, I think it had become an attractive factor for foreign investments. (This) cannot be calculated precisely how much return on investments we have, however, we know for sure, that it is a factor that brought in a lot of people, encourage them to deal with Dubai since it is at the forefront delivering services .

eServices and eGovernment is in front or the flagship of the government in its endeavor of cutting the red tape, increasing the transparency, delivering customer-centric services, so as a whole, I believe, yes , it is a useful system, a whole ecosystem that has been created with eGovernment. I think, yes, it is useful.

Researcher: You mention about the usefulness in terms of economic perspective. What about from public services? What do you see the usefulness for ordinary public people?

Salem Al-Shair: First of all, the automation in eGovernment comes as a natural progressiveness to that. As you know, we started in Dubai the automation early in the 80's and when the eGovernment initiative came in the year 2000 it was a natural progression of that. Moreover, the Excellence Award that was launched in 1996, was again another initiative that was geared towards improving government services, government departments in their relationship with their customers.

So to the customers, the government was striving hard to deliver better services, more customer-centric services to their clients, and the eGovernment was another step on that. As you know, the Excellence Award focus primarily on the internal behavior of these organisations whether improving the skills-set of staff, improving their customer services, delivering mechanisms, improving the processes, cutting down on the red tape, cutting down on the time needed to process each transaction. The eGovernment initiative came to push things further where it has focused primarily in reducing the time of processing and delivering services remotely, where customers doesn't have to drive to go to a ministry or

department in order to conclude or request for a service. Now, saving that whether it is time, or money involved, that is great saving for the community.

I remember, we did one study, with simple calculations of each transaction you save on a trip of the customer. With the big number of transactions that people do in a daily basis with the government, and you calculate that and how much does the government cost in terms of individuals that will be interacting with the customer. If you calculate also the cost of customer who comes to that entity. If it takes him two hours from leaving his office and coming to the department, interacts and leaves. That is two hours of his time. Now, dividing the GDP by individuals at Dubai and finding out the time per individual multiplied by 2 hours wasted multiplied by the number of transactions daily.

You get enormous savings to the community which is the businesses, individuals, and to the government. There is a lot of savings. As you know, each individual travelling to department is using the roads, polluting the environment, his making congestions, his using parking space, and his using service fees within that department. All of these, if you add it up that makes a lot of savings. Truly, nobody is doing it exactly but you'll come out with figures since we started eGovernment. That's a lot of hundreds and hundreds if not millions saved, and people's time is also saved which is also money in itself where people may utilise to do something else which may add to the productivity of the city.

Researcher: This will bring us to the second question – Do eGovernment initiatives create a system that is easy to use/ effortless?

Salem Al-Shair: If we think of systems now in the sense of software, websites, eServices, online, doing transactions online, no, I don't think everybody had or was successful into doing it or availing of eServices to their clients that is effortless or easy to use. That's why we've created two (2) quality measures that we conduct on websites and eServices for the same reason as your question is about. One evaluation that we do in Dubai, twice in a year where we evaluate the website itself for same good reason that you have mention – i.e., is it easy to use, is it well-navigated, the look and feel, the adherence to world standards of developing websites, the accessibility for people with special needs – whether its vision, or hearing or whatever. So we do twice a year this website evaluation where we rank the sites. Also we do one evaluation annually that is to

evaluate the eServices and we have something in between 100-140 criteria that we look at depending on the type of eServices where will figure exactly the effortless, the easiness of using these services, the continuity of transactions once when you're in it, the security, the navigation issues, so many issues that we cover just focusing on the easiness and usefulness and also adhering to standards when it comes to quality of eServices just to achieve the core of your question of making it easy to every individual regardless of one's skills, and how easy and effortless for that individual, and safe also to conduct transactions online.

Researcher: This will bring us to the third question, after nine (9) years of starting the initiatives, what is the level of completion of eGovernment initiatives of Dubai now or project itself? Can you give a percentage?

Salem Al-Shair: I think it had matured very well. Most of the departments in Dubai now have achieved 90% availability of services online. When we say being available, it could be just having a description of the service online or on the website and that's it. That could be a starting point, having just the information about the service, the requirements which to conduct that services, the fees required, how to do it. Once they start adding to that, i.e., adding an e-form or making it transactional whether it is interactive or adding a payment to it or completing it online with individual computing, that is what we consider the completion of eServices. So we have two factors that we major – the e-enablement which is taking everything and putting it online – putting something online about the service – it started with the description. And the other major is the completion. Now each item on each service that was put online, how complete is it? Is it only informational or is it transactional, is there payment? Or is there conclusion online? That is what we call the completion. Now, the completion, I think in most cases, we have reached the 70%. For the e-enablement, we have passed the 90% barrier.

Researcher: The fourth question is – what is the level of acceptance of eGovernment initiatives of Dubai from the different stakeholders – like government bodies, public, business, all stakeholders.

Salem Al-Shair: We have varied levels of acceptance. When it comes to government, it is mandated that all government entities to deliver their services online and make them as complete as possible online. So for the government entities it is a must, a mandate and everybody realises the benefit also for themselves.

For individuals, we were lightly in the beginning short in advertising properly but then many departments started also having their marketing campaign. In many cases they started also creating awareness initiatives within their services like the municipality for example they started the campaign “closed counter”, where you come to the counter where you used to go for those transactions, and it is closed, now you need to do it online. Now, if you asked the question, I don’t know how. They have a kind of training facility just nearby the same area where they show you how to do that transaction online. So at the end of the day, you leave the premises, knowing how to conduct that services online which was I think, every good initiative when they closed the counter for like week, everybody who comes in, they push them to the online thing, and they train them how to do it. So by both, stick and carrot, it had achieved good acceptance. We also do annual service, twice a year, where we measure people’s awareness, their trusts, and their satisfaction. So we do survey that covers this three factors and we have been getting good ratings. I think 60 or 70% that last thing I have seen.

Researcher: The fifth question is – what are the challenges/ factors towards a successful transformation of eGovernment of Dubai?

Salem Al-Shair: Well it is, people, people and people. We start with those on the top Leadership. We need to have a leader who has a vision, stamina to follow up on the execution of his vision. In many places, we have seen people come up with this big vision, but the leader don’t follow up, and that’s where it fall apart.

We were blessed by his Highness Sheikh Mohammed Bin Rashed Al Maktoum, the Ruler of Dubai, who had put a lot of energy in chasing this initiative, and making sure it is always on track. Now, this is extremely important because this is the main factor that pushes every senior official in departments to adopt standards of eGovernment, and the

evaluations that we do are taken seriously and push organisations to deliver. So this is the main thing – the people on top -- the leader and his vision, and to follow up on his vision.

We come down once again to people, that is people within each entity, within each department. They have to be customer-centric. They have to have that vision of being proactive coming up with ideas unlimited, to deliver services. Again, people within their technology division, their IT, they should not be seeking the best hardware and software forgetting the capabilities of people to deal with those technologies. One of the issues that we have faced or hurdle that we have faced throughout the endeavour of eGovernment is that, you bought this software that is to do something but you don't have enough people to deal with it or people capable of dealing with that product.

So you wind up buying an F16 jet and you have only taxi drivers. It doesn't work.

So one has to look before acquiring any technology, the availability of technical resources that will be able to deal with that technology and use it to the fullest. If you don't have that, then your technology is useless and wasted money. So people again are important who use the technology, their skill sets, their and their capabilities.

Now, the third people are the users, the individuals or businesses that will be using these services. You have to focus on marketing, awareness campaign for the people to know what is available because there is no use t good services that people doesn't know about. So awareness. You'll have to convince them that is trustworthy , that it is safe to transact online that they should be comfortable with. Then, you'll have to continuously gauge their acceptance, their satisfaction about these services to approve it. So again the people. If these people are not convincing, if they don't feel that it is for their benefit, so they will not use it. So people, people, people.

Researcher: Don't you think that one of the challenges that eGovernment is facing is the fact that 80% of the population are foreigners?

Salem Al-Shair: Ok, we have the highest or one of the highest penetrations of internet, pc or mobile. So we are blest that people here in Dubai are computer savvy. They

are not illiterate. So illiteracy is neither a big factor nor the availability of access like in other places where access to internet is either expensive or unavailable. No, we have it (internet) here. We have it in the mobile; we have it in the laptop, in the computers at work and in the leisure places. So it is available. It is just convincing people that you can conduct services online. That is the only factor. But availability is there, illiteracy is not an issue to us.

Researcher: This will bring us to the final question. What are the benefits/ opportunities of a eGovernment towards the development of Dubai. I think partially you have answered this question in the first question when you talked about usefulness. So to you , what is the opportunity and benefit?

Salem Al-Shair: Dubai is the city of the tallest tower, the man-made islands, the fierce horse race, the most expensive race, and the fastest boats. So Dubai is always at the forefront, and always aims towards the first, and it is, when it comes to eGovernment.

It is the first to announce it in the Middle East. We were topping the list of the countries or cities for the past six years, seven years or so. To us, that is an achievement, and that achievement brings in opportunities. A lot of people who are outside Dubai, wanted to live in Dubai because of these factors – the safety of Dubai, the openness, the capability to conduct services with the government remotely. That was our endeavour in the eGovernment, and that has been achieved and being appreciated by so many people.

It spreads like fire in the summer. It is not only government delivering now eServices; it is even the private sector. It has learned the trick, it has convinced their customers. Even the private sector are following the government in (making available the eServices), be it delivering groceries online, be it shopping online, be it booking on line, a lot of business have grown after the initiative. Good things are infectious. When you do something good, a lot of people around you will try to copy that and this is what happened.

The Government takes the lead and the private sector follows. So the eGovernment initiative definitely created an ecosystem, and it added a great value to attractiveness of Dubai.

Researcher: As always they say, the grass is greener on the other side of the river. Don't you think, it (the eGovernment) has something to be taken care of, that still there is a lot of challenges we have to consider to bring more success to the initiative.

Salem Al-Shair: Talking positively about the initiative doesn't mean it had reached the peak and doesn't point to the fact that we have reached an end line. In success, there is no end line. Definitely, we agreed to that vision. Everybody in the world agreed to that vision.

Yes, you can do something today, but tomorrow somebody will do something better than what you're doing.

Through the eight (8) years of this eGovernment initiative, we have learned a lot. We have our share of mistakes, we have our share of hurdles that we had to crossover. We still have a lot of things for the future as you know things change, and they change drastically in some cases. One has to be ready for the change.

So, yes, we have our share of mistakes which now in my endeavor with the federal government, we strive to eliminate. We try to do things slightly differently. In some areas we try to do it drastically differently because our environment has also changed.

The cities and countries around us have learned from our mistakes. We have publicised and made public news (our mistakes) to any individual, to any entity, or to any delegation that comes to us. We start with our mistakes for them to learn from, not to repeat them. By doing so, with their intelligence, capabilities also to foresee the future, they have achieved in many areas that we did recently.

I cannot say we lost the stamina, but we started moving slower than we should. They (other cities and countries) have learned the tricks and bypassed us. Now what we have to do is fire up the engines again and hope to continue the race with them.

Researcher: Your Excellency, Mr Salem Al Shair, thank you very much for your time and for giving us this opportunity.

Salem Al-Shair: Thank you and I wish you all the best in your endeavours.

Appendix no. 4

An Artist's Depiction of Dubai eGovernment



In 2001, the researcher chanced upon an exhibition where he took a picture of this fascinating painting. The family in the painting depicts the future ethos of communities of Dubai, benefiting from ICT infusion and eGovernment implementation. Attempts were made without success to discover the identity of the painter to properly attribute this work.

Appendix no. 5 – Cover Letter for Questionnaire for All Respondents

February 2009

Dear Respondent,

Greetings!

I am presently conducting a study entitled “Towards an eGovernment: the Case of the Emirate of Dubai” as a Ph.D. requirement in University of Westminster, London.

eGovernment refers to the use of Information and Communication Technology (ICT) by Dubai government agencies to support government operations, engage citizens and provide government services.

In view thereof, may I humbly request your support by accomplishing the appended questionnaire honestly and to the best of your knowledge as your inputs are indispensable in the realisation of this study.

Rest assured that all information provided will be held in the strictest confidentiality and constraint.

My utmost gratitude and appreciation for your support and cooperation.

Very truly yours,

Waleed Rashed Ebrahim Al Bakr

Researcher

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www.wimn.ac.uk

Appendix no. 6 – Questionnaire-Checklist for Citizen

Questionnaire-Checklist for Citizen

Towards an eGovernment: the Case of the Emirate of Dubai

eGovernment refers to the use of Information and Communication Technology (ICTs) by Dubai government agencies to support government operations, engage citizens and provide government services.

General Information

Direction : Please check the items applicable to you.

1. Gender

Male Female

2. Nationality

UAE
 Arab Countries
 European
 Asian
 African
 Others

3. Age Bracket

Below 18
 18-25
 26-35
 36-45
 46-60
 Above 60

4. Education

Illiterate (not able to read and write)
 Literate (able to read and write)

- Secondary School Certificate
- Undergraduate (unable to finish college)
- Graduate (able to finish college)
- Post Graduate (masters/ doctorate)

5. Experience of eService/eGovernment of Dubai

Have you availed or use eService/eGovernment of Dubai? Yes No

If yes, in what way?

5.1. Access published information or search information or disseminate information

Yes No

5.2. Fill up forms on-line or email feedback and inquiries or participate in online forums and

bulletin boards Yes No

5.3. Made ePayments or eProcurements or E-Registrations Yes No

5.4. Have personalisation/customisation of eServices or Web services Yes No

Part 1. Level of Perceived Usefulness and Perceived Ease of Use of eGovernment of Dubai through its Portal

1.1. Perceived Usefulness

(This is the degree of belief that the system will improve one's performance.)

Direction: Please indicate the degree of usefulness of eGovernment of Dubai through its Portal by using the following scale:

5 – very useful (VU)

4 - useful (U)

3 - moderately useful (MU)

2 - less useful (LU)

1 - not useful at all (NU)

	(VU)	(U)	(MU)	(LU)	(NU)
1.1.1. Reduction of fraud and corruption.	5	4	3	2	1
1.1.2. Reduction of travel costs, and road congestion	5	4	3	2	1

1.1.3. Reduction of needed physical presence.	5	4	3	2	1
1.1.4. Reduction of processing time of transactions.	5	4	3	2	1
1.1.5. Time saving of public servants.	5	4	3	2	1
1.1.6. Reduction of error-rates, rework and complaints.	5	4	3	2	1
1.1.7. Reduction of the need for multiple collections from single customer.	5	4	3	2	1
1.1.8. More flexible working hours	5	4	3	2	1
1.1.9. More accurate, up-to-date and reliable data and information.	5	4	3	2	1
1.1.10. Greater information sharing across government.	5	4	3	2	1
1.1.11. Improve security – no security breaches	5	4	3	2	1
1.1.12. Less redundancy through integrated services	5	4	3	2	1
1.1.13. Price reduction of service charges	5	4	3	2	1
1.1.14. Reduction of user time (hours saved)	5	4	3	2	1
1.1. 15. Transparency of processes and transactions.	5	4	3	2	1

1.2. Perceived Ease of Use

(This is the degree of belief that the system will be effortless or easy to use.)

Direction: Please indicate the degree of usefulness of eGovernment of Dubai through its Portal by using the following scale:

5 – very easy to use (VE)

4 - easy to use (E)

3 - moderately easy to use (ME)

2 - less easy to use (LE)

1 - not easy to use at all (NE)

(VE) (E) (ME) (LE) (NE)

1.2.1. Sufficiency of overall content and directory.	5	4	3	2	1
1.2.2. Easiness of overall navigation.	5	4	3	2	1
1.2.3. Pleasantness of the overall look.	5	4	3	2	1
1.2.4. Appropriateness of vocabulary/ language	5	4	3	2	1
1.2.5. Correctness of grammar and spelling.	5	4	3	2	1
1.2.6. Clarity and appropriateness of text on font, sizes and readability.	5	4	3	2	1

1.2.7. Orderliness of organisation of the contents	5	4	3	2	1
1.2.8. Accuracy and sufficiency of information.	5	4	3	2	1
1.2.9. Mobility of the user in the site	5	4	3	2	1
1.2.10 Consistency of style throughout.	5	4	3	2	1
1.2.11. Functionality of links.	5	4	3	2	1
1.2.12. Customer interface and usability	5	4	3	2	1
1.2.13. 24/7 service delivery in multi- channels	5	4	3	2	1
1.2.14. Timeliness of Information	5	4	3	2	1
1.2.15. Appropriateness of Illustrations.	5	4	3	2	1

Part 2 – Level of Completion of eGovernment of Dubai

Direction: Please indicate the level of completion of eGovernment initiatives of Dubai by using the following scale:

- 5 – wholly completed (WC)
- 4 - largely completed (LC)
- 3 - half completed (HC)
- 2 - few completed (FC)
- 1 - not any initiative is completed (NC)

2.1 Government to Customer

2.1.1. Website/portal provides accurate, up-to-date, (WC) (LC) (HC) (FC) (NC)
and relevant information to customers. 5 4 3 2 1

e.g. Customers readily have useful information, directories, ways and hours of operation of services, weather, etc.

2.1.2. Website/ portal allows informational queries and forms to be completed on-line on government services. 5 4 3 2 1

e.g. Customers can renew licenses, order birth certificates, get visa documents, etc.

2.1.3. Website/portal allows an exchange of value as government agencies interact directly with clients on-line, including recording,

and storing sensitive information. 5 4 3 2 1
 e.g. Paying parking fees, applying for visa, etc.

2.1.4. Website/ portal integrates government services

based on needs and functions,

and not on departments or agencies. 5 4 3 2 1

e.g. Personalised user interface and functions as customer.

Part 3 – Level of Acceptance of eGovernment of Dubai

Direction: Please encircle the level of Acceptance of eGovernment initiatives of Dubai by using the following scale:

5 – very much accepted (VA)

4 - accepted (A)

3 - moderately accepted (MA)

2 - slightly accepted (SA)

1 - not accepted at all (NA)

3.1 Government to Customer

3.1.1. Website/portal provides accurate, up-to-date, (VA) (A) (MA) (SA)
 (NA)

and relevant information to customers. 5 4 3 2 1

e.g. Customers readily have useful information, directories,
 ways and hours of operation of services, weather, etc.

3.1.2. Website/ portal allows informational queries and

forms to be completed on-line on government services. 5 4 3 2 1

e.g. Customers can renew licenses, order birth certificates,
 get visa documents, etc.

3.1.3. Website/portal allows an exchange of value as government agencies

interact directly with clients on-line, including recording,

and storing sensitive information. 5 4 3 2 1

e.g. Paying parking fees, applying for visa, etc.

3.1. 4. Website/ portal integrates government services

based on needs and functions,

and not on departments or agencies.

5 4 3 2 1

e.g. Personalised user interface and functions as customer.

Part 4 – Factors/Challenges towards a Successful Transformation of eGovernment of Dubai

Direction: Please encircle the degree of importance of the Factors/Challenges towards a successful transformation of eGovernment of Dubai using the following scale:

5 very important (VI)

4 - important (I)

3 - moderately important (MI)

2 - slightly important (SI)

1 - not important at all (NI)

	(VI)	(I)	(MI)	(SI)	(NI)
4.1. ICT infrastructure (E-Readiness, computer literacy, telecommunication equipment)	5	4	3	2	1
4.2. Policy issues (legislation)	5	4	3	2	1
4.3. Human capital devt and life long learning (skills, capabilities, education ,learning)	5	4	3	2	1
4.4. Change management (culture, resistance to change)	5	4	3	2	1
4.5. Partnership and collaboration (public/private partnership,					

community and network creation)	5	4	3	2	1
4.6. Strategy					
(vision, mission)	5	4	3	2	1
4.7. Leadership role					
(motivate, involve, influence, support)	5	4	3	2	1

Part 5 – Impact/Opportunities of eGovernment towards the Development of Dubai

Direction: Please indicate the degree of significance of the Factors/Challenges towards a successful transformation of eGovernment of Dubai using the following scale:

- 5 – very significant (VS)
- 4 - significant (S)
- 3 - moderately significant (MS)
- 2 - slightly significant (SS)
- 1 - not significant at all (NS)

	(VS)	(S)	(MS)	(SS)	
(NS)					
5.1. Cost reduction	5	4	3	2	1
5.2. Efficiency gains	5	4	3	2	1
5.3. Quality of service delivery to clients	5	4	3	2	1
5.4. Transparency, anticorruption, accountability	5	4	3	2	1
5.5. Increase the capacity of government	5	4	3	2	1
5.6. Network and community creation	5	4	3	2	1
5.7. Improve the quality of decision making	5	4	3	2	1
5.8. Promote use of ICT in other sectors of the society	5	4	3	2	1

Thank you very much.

To the future of Dubai, let us be.

Appendix no. 7 – Questionnaire-Checklist for Business Employees

Questionnaire-Checklist for Business Employees

Towards an eGovernment: the Case of the Emirate of Dubai

eGovernment refers to the use of Information and Communication Technology (ICT) by Dubai government agencies to support government operations, engage citizens, and provide government services.

General Information

Direction : Please check the items applicable to you.

1. Gender

Male Female

2. Nationality

UAE
 Arab Countries
 European
 Asian
 African
 Others

3. Age Bracket

Below 18
 18-25
 26-35
 36-45
 46-60
 Above 60

4. Education

Illiterate (not able to read and write)

- Literate (able to read and write)
- Secondary School Certificate
- Undergraduate (unable to finish college)
- Graduate (able to finish college)
- Post Graduate (masters/ doctorate)

5. Experience of eService/eGovernment of Dubai

Have you availed or use eService/eGovernment of Dubai? Yes No

If yes, in what way?

5.1. Access published information or search information or disseminate information

Yes No

5.2. Fill up forms on-line or email feedback and inquiries or participate in online forums and

bulletin boards Yes No

5.3. Made ePayments or eProcurements or E-Registrations Yes No

5.4. Have personalisation/customisation of eServices or Web services Yes No

Part 1. Level of Perceived Usefulness and Perceived Ease of Use of eGovernment Initiatives of Dubai through its Portal

1.1. Perceived Usefulness

(This is the degree of belief that the system will improve one's performance.)

Direction: Please indicate the degree of usefulness of eGovernment of Dubai through its Portal by using the following scale:

5 – very useful (VU)

4 - useful (U)

3 - moderately useful (MU)

2 - less useful (LU)

1 - not useful at all (NU)

	(VU)	(U)	(MU)	(LU)	(NU)
1.1.1. Reduction of fraud and corruption.	5	4	3	2	1

1.1.2. Reduction of travel costs, and road congestion	5	4	3	2	1
1.1.3. Reduction of needed physical presence.	5	4	3	2	1
1.1.4. Reduction of processing time of transactions.	5	4	3	2	1
1.1.5. Time saving of public servants.	5	4	3	2	1
1.1.6. Reduction of error-rates, rework and complaints.	5	4	3	2	1
1.1.7. Reduction of the need for multiple collections from single customer.	5	4	3	2	1
1.1.8. More flexible working hours	5	4	3	2	1
1.1.9. More accurate, up-to-date and reliable data and information.	5	4	3	2	1
1.1.10. Greater information sharing across government.	5	4	3	2	1
1.1.11. Improve security – no security breaches	5	4	3	2	1
1.1.12. Less redundancy through integrated services	5	4	3	2	1
1.1.13. Price reduction of service charges	5	4	3	2	1
1.1.14. Reduction of user time (hours saved)	5	4	3	2	1
1.1. 15. Transparency of processes and transactions.	5	4	3	2	1

1.2. Perceived Ease of Use

(This is the degree of belief that the system will be effortless or easy to use.)

Direction: Please indicate the degree of usefulness of eGovernment of Dubai through its Portal by using the following scale:

5 – very easy to use (VE)

4 - easy to use (E)

3 - moderately easy to use (ME)

2 - less easy to use (LE)

1 - not easy to use at all (NE)

(VE) (E) (ME) (LE) (NE)

1.2.1. Sufficiency of overall content and directory.	5	4	3	2	1
1.2.2. Easiness of overall navigation.	5	4	3	2	1
1.2.3. Pleasantness of the overall look.	5	4	3	2	1
1.2.4. Appropriateness of vocabulary/ language	5	4	3	2	1
1.2.5. Correctness of grammar and spelling.	5	4	3	2	1
1.2.6. Clarity and appropriateness of text on font,					

sizes and readability.	5	4	3	2	1
1.2.7. Orderliness of organisation of the contents	5	4	3	2	1
1.2.8. Accuracy and sufficiency of information.	5	4	3	2	1
1.2.9. Mobility of the user in the site	5	4	3	2	1
1.2.10 Consistency of style throughout.	5	4	3	2	1
1.2.11. Functionality of links.	5	4	3	2	1
1.2.12. Customer interface and usability	5	4	3	2	1
1.2.13. 24/7 service delivery in multi- channels	5	4	3	2	1
1.2.14. Timeliness of Information	5	4	3	2	1
1.2.15. Appropriateness of Illustrations.	5	4	3	2	1

Part 2 – Level of Completion of eGovernment initiatives of Dubai

Direction: Please indicate the level of completion of eGovernment initiatives of Dubai by using the following scale:

- 5 – wholly completed (WC)
- 4 - largely completed (LC)
- 3 - half completed (HC)
- 2 - few completed (FC)
- 1 - not any initiative is completed (NC)

2.2. Government to Business

2.2.1. Website/portal provides accurate, up-to-date, (WC) (LC) (HC) (FC) (NC)
and relevant information to business. 5 4 3 2 1

e.g. Business has access to useful information, directories,
ways and hours of operation of services, economic and business statistics, etc.

2.2.2. Website/ portal allows informational queries and
forms to be completed on-line on government services. 5 4 3 2 1
e.g. Business can renew licenses, permits, etc.

2.2.3. Website/portal allows an exchange of value as government agencies
interact directly with clients on-line, including recording,

and storing sensitive information. 5 4 3 2 1
 e.g. Paying fees and duties online.

22.4. Website/ portal integrates government services

based on needs and functions,

and not on departments or agencies. 5 4 3 2 1

e.g. Personalised user interface and functions as business.

Part 3 – Level of Acceptance of eGovernment initiatives of Dubai

Direction: Please encircle the level of Acceptance of eGovernment initiatives of Dubai by using the following scale:

5 – very much accepted (VA)

4 - accepted (A)

3 - moderately accepted (MA)

2 - slightly accepted (SA)

1 - not accepted at all (NA)

3.2. Government to Business

3.2.1. Website/portal provides accurate, up-to-date, (VA) (A) (MA) (SA)
 (NA)

and relevant information to business. 5 4 3 2 1

e.g. Business have access to useful information, directories,
 ways and hours of operation of services, economic and business statistics, etc.

3.2.2. Website/ portal allows informational queries and

forms to be completed on-line on government services. 5 4 3 2 1

e.g. Business can renew licenses, permits, etc.

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interact directly with clients on-line, including recording,

and storing sensitive information. 5 4 3 2 1

e.g. Paying fees and duties online.

3.2.4. Website/ portal integrates government services

based on needs and functions,

and not on departments or agencies.

5 4 3 2 1

e.g. Personalised user interface and functions as business.

Part 4 – Factors/Challenges towards a Successful Transformation of Dubai

Direction: Please encircle the degree of importance of the Factors/Challenges towards a successful transformation of eGovernment of Dubai using the following scale:

5 – very important (VI)

4 - important (I)

3 - moderately important (MI)

2 - slightly important (SI)

1 - not important at all (NI)

	(VI)	(I)	(MI)	(SI)	(NI)
4.1. ICT infrastructure (E-Readiness, computer literacy, telecommunication equipment)	5	4	3	2	1
4.2. Policy issues (legislation)	5	4	3	2	1
4.3. Human capital devt and life long learning (skills, capabilities, education ,learning)	5	4	3	2	1
4.4. Change management (culture, resistance to change)	5	4	3	2	1
4.5. Partnership and collaboration (public/private partnership, community and network creation)	5	4	3	2	1

4.6. Strategy (vision, mission)	5	4	3	2	1
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4.7. Leadership role (motivate, involve, influence, support)	5	4	3	2	1
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Part 5 – Impact/Opportunities of eGovernment initiatives
towards the Development of Dubai

Direction: Please indicate the degree of significance of the Factors/Challenges towards a successful transformation of eGovernment of Dubai using the following scale:

- 5 – very significant (VS)
- 4 - significant (S)
- 3 - moderately significant (MS)
- 2 - slightly significant (SS)
- 1 - not significant at all (NS)

	(VS)	(S)	(MS)	(SS)	(NS)
5.1. Cost reduction	5	4	3	2	1
5.2. Efficiency gains	5	4	3	2	1
5.3. Quality of service delivery to clients	5	4	3	2	1
5.4. Transparency, anticorruption, accountability	5	4	3	2	1
5.5. Increase the capacity of government	5	4	3	2	1
5.6. Network and community creation	5	4	3	2	1
5.7. Improve the quality of decision making	5	4	3	2	1
5.8. Promote use of ICT in other sectors of the society	5	4	3	2	1

Thank you very much.

To the future of Dubai, let us be.

Appendix no. 8 – Questionnaire-Checklist for Government Employees

Questionnaire-Checklist for Government Employees

Towards an eGovernment: the Case of the Emirate of Dubai

eGovernment refers to the use of Information and Communication Technology (ICTs) by Dubai government agencies to support government operations, engage citizens and provide government services.

General Information

Direction : Please check the items applicable to you.

1. Gender

Male Female

2. Nationality

UAE
 Arab Countries
 European
 Asian
 African
 Others

3. Age Bracket

Below 18
 18-25
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 46-60
 Above 60

4. Education

Illiterate (not able to read and write)
 Literate (able to read and write)

- Secondary School Certificate
- Undergraduate (unable to finish college)
- Graduate (able to finish college)
- Post Graduate (masters/ doctorate)

5. Experience of eService/eGovernment of Dubai

Have you availed or use eService/eGovernment of Dubai? Yes No

If yes, in what way?

5.1. Access published information or search information or disseminate information

Yes No

5.2. Fill up forms on-line or email feedback and inquiries or participate in online forums and

bulletin boards Yes No

5.3. Made ePayments or eProcurements or E-Registrations Yes No

5.4. Have personalisation/customisation of eServices or Web services Yes No

Part 1. Level of Perceived Usefulness and Perceived Ease of Use of eGovernment of Dubai through its Portal

1.1. Perceived Usefulness

(This is the degree of belief that the system will improve one's performance.)

Direction: Please indicate the degree of usefulness of eGovernment of Dubai through its Portal by using the following scale:

5 – very useful (VU)

4 - useful (U)

3 - moderately useful (MU)

2 - less useful (LU)

1 - not useful at all (NU)

	(VU)	(U)	(MU)	(LU)	(NU)
1.1.1. Reduction of fraud and corruption.	5	4	3	2	1
1.1.2. Reduction of travel costs, and road congestion	5	4	3	2	1

1.1.3. Reduction of needed physical presence.	5	4	3	2	1
1.1.4. Reduction of processing time of transactions.	5	4	3	2	1
1.1.5. Time saving of public servants.	5	4	3	2	1
1.1.6. Reduction of error-rates, rework and complaints.	5	4	3	2	1
1.1.7. Reduction of the need for multiple collections from single customer.	5	4	3	2	1
1.1.8. More flexible working hours	5	4	3	2	1
1.1.9. More accurate, up-to-date and reliable data and information.	5	4	3	2	1
1.1.10. Greater information sharing across government.	5	4	3	2	1
1.1.11. Improve security – no security breaches	5	4	3	2	1
1.1.12. Less redundancy through integrated services	5	4	3	2	1
1.1.13. Price reduction of service charges	5	4	3	2	1
1.1.14. Reduction of user time (hours saved)	5	4	3	2	1
1.1. 15. Transparency of processes and transactions.	5	4	3	2	1

1.2. Perceived Ease of Use

(This is the degree of belief that the system will be effortless or easy to use.)

Direction: Please indicate the degree of usefulness of eGovernment of Dubai through its Portal by using the following scale:

5 – very easy to use (VE)

4 - easy to use (E)

3 - moderately easy to use (ME)

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1 - not easy to use at all (NE)

(VE) (E) (ME) (LE) (NE)

1.2.1. Sufficiency of overall content and directory.	5	4	3	2	1
1.2.2. Easiness of overall navigation.	5	4	3	2	1
1.2.3. Pleasantness of the overall look.	5	4	3	2	1
1.2.4. Appropriateness of vocabulary/ language	5	4	3	2	1
1.2.5. Correctness of grammar and spelling.	5	4	3	2	1
1.2.6. Clarity and appropriateness of text on font, sizes and readability.	5	4	3	2	1

1.2.7. Orderliness of organisation of the contents	5	4	3	2	1
1.2.8. Accuracy and sufficiency of information.	5	4	3	2	1
1.2.9. Mobility of the user in the site	5	4	3	2	1
1.2.10 Consistency of style throughout.	5	4	3	2	1
1.2.11. Functionality of links.	5	4	3	2	1
1.2.12. Customer interface and usability	5	4	3	2	1
1.2.13. 24/7 service delivery in multi- channels	5	4	3	2	1
1.2.14. Timeliness of Information	5	4	3	2	1
1.2.15. Appropriateness of Illustrations.	5	4	3	2	1

Part 2 – Level of Completion of eGovernment of Dubai

Direction: Please indicate the level of completion of eGovernment of Dubai by using the following scale:

- 5 – wholly completed (WC)
- 4 - largely completed (LC)
- 3 - half completed (HC)
- 2 - few completed (FC)
- 1 - not any initiative is completed (NC)

2.4. Government to Employee

2.4.1. Website/portal provides accurate, up-to-date, and relevant information to government employees.

5 4 3 2 1

e.g. Government employees have access to useful information.

2.4.2. Website/ portal allows informational queries and forms to be completed on-line on government services.

5 4 3 2 1

e.g. Government employees request approval from central government.

Government employees verify status of legal cases, visa and other processes and transactions.

2.4.3. Website/portal allows an exchange of value as government agencies interact directly with clients on-line, including recording,

and storing sensitive information. 5 4 3 2 1
 e.g. Government employees pay fees and duties online..

2.4.4. Website/ portal integrates government services

based on needs and functions,

and not on departments or agencies. 5 4 3 2 1

e.g. Personalised user interface and functions as government employee.

Part 3 – Level of Acceptance of eGovernment of Dubai

Direction: Please encircle the level of Acceptance of eGovernment initiatives of Dubai by using the following scale:

5 – very much accepted (VA)

4 - accepted (A)

3 - moderately accepted (MA)

2 - slightly accepted (SA)

1 - not accepted at all (NA)

3.4. Government to Employee

3.4.1. Website/portal provides accurate, up-to-date, and relevant information

to government employees. 5 4 3 2 1

e.g. Government employees have access to useful information on compensation and benefit policies, training opportunities, laws, memos, etc.

3.4.2. Website/ portal allows informational queries and

forms to be completed on-line on government services. 5 4 3 2 1

e.g. Government employees request approval from central government.

Government employees verify status of legal cases, visa and other processes and transactions.

3.4.3. Website/portal allows an exchange of value as government agencies

interact directly with clients on-line, including recording,

and storing sensitive information. 5 4 3 2 1
 e.g. Government employees pay fees and duties online.

3.4. 4. Website/ portal integrates government services

based on needs and functions,

and not on departments or agencies. 5 4 3 2 1

e.g. Personalised user interface and functions as government employee.

Part 4 – Factors/Challenges towards a Successful Transformation of eGovernment of Dubai

Direction: Please encircle the degree of importance of the Factors/Challenges towards a successful transformation of eGovernment of Dubai using the following scale:

5 – very important (VI)

4 - important (I)

3 - moderately important (MI)

2 - slightly important (SI)

1 - not important at all (NI)

	(VI)	(I)	(MI)	(SI)	(NI)
4.1. ICT infrastructure (E-Readiness, computer literacy, telecommunication equipment)	5	4	3	2	1
4.2. . Policy issues (legislation)	5	4	3	2	1
4.3. Human capital devt and life long learning (skills, capabilities, education ,learning)	5	4	3	2	1
4.4. . Change management (culture, resistance to change)	5	4	3	2	1
4.5. Partnership and collaboration (public/private partnership,					

community and network creation)	5	4	3	2	1
4.6. Strategy					
(vision, mission)	5	4	3	2	1
4.7. Leadership role					
(motivate, involve, influence, support)	5	4	3	2	1

Part 5 – Impact/Opportunities of eGovernment towards the Development of Dubai

Direction: Please indicate the degree of significance of the Factors/Challenges towards a successful transformation of eGovernment of Dubai using the following scale:

- 5 – very significant (VS)
- 4 - significant (S)
- 3 - moderately significant (MS)
- 2 - slightly significant (SS)
- 1 - not significant at all (NS)

	(VS)	(S)	(MS)	(SS)	(NS)
(NS)					
5.1. Cost reduction	5	4	3	2	1
5.2. Efficiency gains	5	4	3	2	1
5.3. Quality of service delivery to clients	5	4	3	2	1
5.4. Transparency, anticorruption, accountability	5	4	3	2	1
5.5. Increase the capacity of government	5	4	3	2	1
5.6. Network and community creation	5	4	3	2	1
5.7. Improve the quality of decision making	5	4	3	2	1
5.8. Promote use of ICT in other sectors of the society	5	4	3	2	1

Thank you very much.

To the future of Dubai, let us be.

Appendix no. 9 – Structured Interview

Structured Interview

Towards an eGovernment: the Case of the Emirate of Dubai

Do eGovernment initiatives create a system that is useful?

Do eGovernment initiatives create a system that is easy to use/ effortless?

What is the level of completion of eGovernment initiatives of Dubai?

What is the level of acceptance of eGovernment initiatives of Dubai?

What are the challenges/ factors towards a successful transformation of eGovernment of Dubai?

What are the benefits and opportunities of eGovernment towards the development of Dubai?

***Note**

Any answer recorded or documented.

Any answer correlated with items in the questionnaire.

Appendix no. 10

The Researcher Demonstrating eServices to Citizens



Appendix no. 11 –

Translation of My Vision – Challenges in the Race for Excellence of Sheikh Mohammed Bin Rashed Al Maktoum (Motivate Publishing: Dubai, 2006) by Waleed Ebrahim Al Bakr

* The translation provided is not of complete text of the above title but rather indicative selections that has strong relevance to the research focus of this study.

The Pulse of Development

We want Dubai to be a global centre of excellence, creativity and leadership, we are able to achieve excellence, creativity, leadership and support to our government with God willing. We want Dubai to be the first civil global trade, tourism and services in the twenty-first century, we are able to provide sophisticated structures and the ideal environment that will enable them to carry out this role. (P.8) We want Dubai to be the first in the safety and security and the rapid growth and the confidence that we are keen to promote and preserve in the financial community, trade, investment sector in both regional and International levels. Dubai dose not compromise on the first position. (P.8-9) This is a big and significant task that requires government and all active members in both private and public sectors, promotion and keep it in mind to put more time and effort to continue enhancing the performance and increasing efficiency to achieve markets expansion and improve the services provided, to strengthen the capacity of the emirate competitive in our fast ever changing world. (P. 14)

When a particular nation accommodates and reflects the previous civilisations, then bridging to new horizons of development and excellence. And when? When the entire nation turn to work as one team. Today, we achieved this goal in Dubai and the entire UAE. (P. 17) Project is an idea and if we do not find the new ideas, we do not want new project that will not meet our criteria we set for ourselves, thus we believe that the shortest route to the bright future as pioneers and leaders. Those who is eager to follow to do so. (p. 18) The large number of highly qualified creative professionals with high desire and determination to provide the best of their working group, is an evidence of our success in the development of human resources, and we will continue to develop this goal as a top

priority as we believe in our sons and daughters of UAE, are the most valuable resource and they are the true key to success now and in future. (p. 19)

In the era of globalisation, the information economy requires high-speed response and depends on the high technologies that enable high level of responsiveness, therefore, it is the age of technology, however, it is highly unpredictable economy which focuses on knowledge and creative ideas, therefore, the era of the creativity . (P. 25) We talk about a new knowledge economy and traditional one. Both Complement each other to make up a new international economy that must be utilised to compensate all what we lost during commercial and industrial eras. (p 25) Dubai has the potential to provide the appropriate conditions for business success in the new economy. we have proven expertise in the field of international trade, and world state of the art infrastructure, and the latest technological infrastructure which is reflected in the establishment of the first free zone in the Middle East e-commerce is the Dubai Internet City, Technology and Information, which opened in October 2000 . (P. 26) Some believe that there are may risks in new economy. We realise this fact. Internet is not all good is not all bad either. We want the good and useful part and will not acquiesce in prejudice to our religion and our customs and traditions. (P. 27)

Elements of Development:

Vision – Leadership, Administration, Decision-making and Team work

My vision to make Dubai World Centre of choice for business and finance in the first half of the twenty-first century. (p. 40) to determine the vision and objectives and essential success factors to ensure the success of the emirate to develop and improve the performance of provided services and effective response to future developments with the ultimate aim of serving the people and raise high the banner of the country everywhere. This is the production I am expecting from the development. It is not a desire by the leader or a gesture of generosity, it is an absolute obligation government and all public servants. It requires of them pursuant to a permanent part of specific and unequivocal, unambiguous strategy without any deviation from track. (P. 41) If the government's first duty is to achieve development, there is a duty no less important is the responsibility of a citizen to contribute to the success of this task (P. 41)

Dubai requires the efforts, creativity and contribution of all who live in it. (P. 42)

Is not sufficient that the Government provides facilities that meet the needs of the present but must be the development of such facilities to respond to the requirements of the future. This is by laying the foundations of building the new economy to develop and institute its legal, economic and technical frameworks. This requires a change: in the education curriculum, training, thinking, functioning government and changing the priorities. (p.43)

Leadership

Sometimes the difference between successful and unsuccessful Government is its role in elimination of obstacles from the lives of its citizens (P.63). We consider human development as a measure to determine the progress of our nation. Without a trained human resources will not be able to achieve any success. This is the responsibility of management, but the responsibility of the leader. This requires the commander who led compassion and consideration to them in their affairs and to facilitate and ensure that the department responsible for these tasks and perform duties to the fullest its failure is the failure and the weakness of its position as the weakening of the consequences to him and back him (P.64).

Nature of development in the UAE involves a high degree of coordination, flexibility and dynamism, and this necessarily requires a greater degree than usual of the organising, consultation and coordination in view of the responsibilities and possibilities overlapping and duplication in mutually agreed action plan and require the joint efforts of among the concerned departments (P. 65).The leader vision is not only a view of economic development, but involves social, moral and ethical aspects integration and development of the society (P. 67)

Administration

Officials in public sector must make sure that if they do not quickly develop the public sector, this sector will be to extinction by the privatisation. If we exclude the sovereign and security affairs, there are no terms of reference in the public sector as the private sector can not do. The public sector is not competitive with the private sector, but the only way to stay competitive is to engage in the competitive race, and raise efficiency and productivity levels high, and led down to the ground for dialogue with their colleagues and with the

businessmen and traders, both old and young generations to benefit from their expertise and experiences and to identify their views of services provided and the best projects to improve and develop performance. (p.69)Government started to apply the principles of modern management and setting standards of management development in the new economy through the initiative of the Dubai Government Excellence programme as a first step . The next step in government reform was E-Government plan. (p.71)

We have another realistic goal which other people think it is a dream and not possible, that to make public sector better than private sector in the service sector in terms of quality and efficiency not because we want to go backward and turn-back the clock and to bring the public sector to replace the private sector. We aim to push the private sector to a new era of excellence, efficiency and performance. P. 72

Decision and Work group

We do not take a decision regarding any project unless we are sure about the feasibility of the project. We assess our capacity of execution and marketability. Once we start a project, we do not stop for a moment until completion. We assure fast and efficient implementation through the follow-up of the stakeholders. Infallibility, prejudice and vanity are not the appropriate specification of the right decision making. In order to verify the best achievement, you must considered study, analyse and be well prepared (p. 74)

Work delegation involves risk taking. When we started E-Government project as Public sector reform to make Dubai an international centre for the new economy and the adoption of modern techniques to enhance the performance, productivity and customer service. I could have chosen the Dubai E-Government Executive team of the managers of government departments known for their efficiency, but I finally decided to select the Executive team of the back rows and choose those who were able to move quickly and accomplish the assigned task successfully not in time, but in record time P. 79

Was this difficulty limited to those whom I deal with them in the public sector? No. Once I presented my vision of eGovernment in a general meeting and I noticed many people from my place on the podium wondering left and right to inquire about the subject. At the end of my presentation, some of young intellectuals came to see me and asked me: What is e-government, and what will happen to their companies, and how it will affect their work!

(P. 81) They say that all the achievements of the human history is a dream and an idea. (p. 89)

Development for survival: Creek's banks

Talked about the dream being fulfilled, we aspire to increase our global competitiveness, which includes a strategic position between East and West, and a sophisticated infrastructure that combines quality and cost-effective business platform and minimum level of bureaucracy and relaxed economic policies and tax free market. (P. 89) The progress of development in Dubai today is not one of the available alternatives to choose from, nor it was an option among the other alternatives available during the rule of my father and my grandfather in the past. It is an essential part of the formation of Dubai and is an essential part of Dubai leader's mind set. It is the basic weapon in the struggle for survival, for the present time and in the past and for the future, the only option that will guarantee the continuation and growth of Dubai and ensure the prevention of complications of the economic crises that carried us east and west. It is based on the principles of the development of free trade, free markets, the open sky, and tax exemptions. The combination of these principles with the skill and experience, of Dubai business community, along with the cooperation of all Dubai citizens, made a great opportunity and resulted in reaching the Dubai leading position as the business and trade hub of the Gulf in leading position. P. 92

Optimism for the future of Dubai and the determination to promote excellence in Dubai's development experience These are defined by the continuity of Dubai. My father experienced the economic crisis experienced by the emirate after the collapse of the pearl trading industry in all so bitter knows exactly the meaning of hunger, poverty and underdevelopment in all the pain and cruelty. He wanted to improve the conditions of the people who he knew how much they had suffered because of recession. This is the only goal he was thinking. He wanted to build a higher fence in order to be able to keep away the spectre of hunger, poverty and underdevelopment on the Dubai forever, and it is thought that the wall quickly discovered the building blocks that made it such as: Dubai creek and Dubai International Airport and Port Rashed and Jebel Ali Sea Port and Jabal Ali Aluminium smelter Factory and some dozens of other projects that made it possible for the components of the traditional economy and the International trade to pass via Dubai in the widest road can be built. P 96

All we have done in the past and everything will be made in the future is continuation and completion of a development initiated by the father but in the new international economic conditions, which require the building of the widest ever road that can be built for the new economy through the implementation of our strategy to diversify the economic structure and develop a firm foundation for prosperity and excellence, and the transformation of Dubai from the Business centre of region to a global hub for finance, services and electronic commerce (P. 97)

Exploration in the minds

I recognise the head of administrative hierarchy, and I understand it very well. However, I always wanted to know the pillars of the pyramid. Obviously open governments that want to be transparent with their clients through the open medium, such as the Internet, aims to have all its agencies open and transparent in order to know, suggest and contribute to the development and improving of the work of these departments. P. 105

Some of the leadership styles that were suitable in the past may no longer suitable today because we face a situation quite different from those prevailing ten years ago or even five years ago. Thus, we must find new forms of leadership that the projects that we plan to implement are so sophisticated and require a high level of initiative and creativity leaders. We talk about large-scale projects that require the largest number of Savvy creators who initiate innovative applications and solution in all Development sectors. We cannot respond to these requirements by relying on only half of the society. Everyone must participate and develop themselves and those who fail to achieve these high specifications will not have a place in our important projects because they will not be able to compete and the run the race. Who ever believed that the goal of securing the future of our coming generations is by going to their offices in the morning and returning to their homes in the evening, did not understand our goal of development. We build and develop and open up roads and at the same time assess the organisations and carry out projects, however, our key objective is the development of minds to deal with the challenges of the future (P.111)

Politicians and policy

The basis of a sound vision requires small details do not blur its great objectives. P. 114

Positive energy and negative energy

Governments work is to revive the creativity. P. 123

our time require that everyone knows how to use the Internet and therefore leaders could not hide his ignorance preventing all people from involvement in this international network. P. 126 It is not possible to bring about positive change and completely change the concepts, open the closed doors and remove bottlenecks and facilitate the needs of the people and still imagine that everyone without exception, would accept this change willingly. P. 127

We want to be treated in a civilised manner as we are all sons of one homeland. In fact, Construction is more difficult than destruction , peace more difficult than the war and imposition more difficult than persuasion, however, all the three are more durable and sustainable. We want the cooperation and the conviction of all of what we do is for the benefit of the people and I do not know any other way closer to a conviction than the good persuasion. P. 128 Development promotes work opportunities and does not weak them. Then: improving productivity strengthen the employees' position. subsequently: attention to customer care results in showing respect and appreciation from citizens. P. 129

Excellence in Dubai's Development vision

Excellence in Development for us, is an integrated concept of civilisation and a process of building in a vertically and a horizontally to the concerned society. In order to achieve excellence in the Arab world, elements of development must all be excellent: vision, objectives, leadership, ideas, management, work groups, planning, standards, training, rehabilitation, projects, implementation, marketing, orientation, productivity, continuity, flexibility and most other elements related to it. P. 135. The basis of right vision: the interest of the people and their well-being. P. 137 Success for us in the UAE means achieving excellence. (p. 138)

We want Dubai to be a global centre of excellence, creativity and leadership. We are competent to achieve excellence, innovation and leadership position with god almighty will and support of our leadership. We want Dubai to be the first global trade and finance, investment and tourism hub in the twenty-first century due to availability of world class infrastructure and services and the environment that would enable us to carry out this role. (p. 138)

The excellence model of public sector is reflected by the ability to satisfy customers and optimise the provided service to the best possible level. (p.140)One of the tools to achieve this accomplishment is the Dubai Government Excellence Programme which was launched in September 1997 to enable the public sector to respond effectively to the challenges of the new era, the performance development of government agencies through continuous training and follow-up of what is evolving in our world of experience and success stories. This is complemented by Dubai Quality Award, aims to dissemination of quality concepts and commitment to its applications in various sectors. P. 140

The work of the government sector involves the obligation to monitor the direction of competition under proper norms, standards and specifications and to remove obstacles and facilitate the work, empowerment, and assist the progress of service provision to all clients, regardless of the sector. If the public sector's performance get improved, end-users will be the first beneficiary, whether a citizen or a company. (p.143)

One of the objectives of the Dubai eGovernment is the reformulation of the concept of the government to be able to provide the best services in the most effectiveness and efficiency levels through the Internet. The basis of the simplification of work procedures is to improve services and this is precisely one of the objectives of e-government.

Other main objectives are improving of service quality, cut costs, reduced errors, faster response time, and the provision of services and information across the Internet, and the elimination of red tapes and bureaucracy and provision of services to the business community whenever, wherever however is required. P. 143 All the talk about offering incentives to foreign investors, the enactment of laws and regulations that help to attract investment from abroad and to facilitate the procedures and other talk is meaningless if we do not put an end to corruption and bribery, this is what we have done very successfully with the cooperation of everyone. P. 146

Dubai offers the best investment opportunities in the world for the following reasons:

- Government sector efficiency and honesty and high integrity.
- Respond effectively to the needs of investors through the provision of what we call 'one-window service government' to facilitate the process of moving to Dubai and the completion of legal procedures, permits and other services

at speeds of submission of a paper and proficiency level, and therefore, adopted more than half of the largest 1000 companies in the world, made the Emirate of Dubai as regional base.

- In Dubai, one of the largest concentrations of skills and experience in the world, which investors can utilise and come across in one place.
- Work and living distinguished environments in highest quality modern buildings.
- Advanced facilities for the promotion, advertising and exhibitions with an international reputation
- (p. 149 -150)

Our goal is organising efforts toward the development of the state using the highly qualified human resources to determine the needs of citizens, residents, visitors and the business community and exceeding their expectations. P. 151 The great responsibility of serving the people requires businesses in both commercial companies and service providers active in this area, to be committed to ethics in dealing with citizens' rights, which should not be bypassed. P. 153 The objective of the public sector is to develop performance and improve the service. This includes a strong commitment to the principle of cost-effectiveness and maximum utilisation of human resources (employees) and material resources available, such as premises and computer systems, and others. P. 154 We must use the computer systems and computer peripherals (printers, scanners, etc.) the most efficient way possible, through local area networks or wide area networks which are connected to other departments and to the Internet. (p.154)

Saving in expenditure is an important objective to achieve in order to reduce burdens on government budget. but, there are other considerable material and moral goals with high value. For example, the efficiency of the public sector does not reflect positively on the performance of the sector, but on the performance of the entire country, including the private sector. When achievements got accelerated in the public sector, the pace of accomplishing work in other sectors the achievement in other sectors go faster and similarly project execution, export import and other business activities. P. 154

Obtaining technology does not mean the end of the way, it is the beginning. More important than acquiring technology, is proficiency to deal with them to achieve the best possible use. This is not limited to the person providing the service, even receipts. That's

why we formed a team work for the training users on dealing with e-government portal on the Internet, and will continue in this effort to help expanding the use of internet and to ease the web access. This would reduce the cost of access to services and reduce the time, too. P. 155 we want to deal with people fairly, equitably and in civilisable way. P. 157 Service must be in highest possible quality worthy for service providers and end-users. P. 157

When the public sector shake off the dust of its routine, customary and slack off, it turns to a wide range of creative and active cells which accumulate in the departments and sections with their expertise and innovative solutions that can be put in the service of other departments and sections for benefit in developing and improving performance. The government sector is the main source of deriving change and progress of countries because Public sector leads and guides. If it is efficient and effective, its impact has no limits to at all levels. Therefore, we expect public sector to play a vital role in realising the vision to make Dubai a leading rival the most economic in the world. At the same time, We also expect it to increase its co-financing. P. 164-165

Common denominators in Dubai projects:

- 1 - includes risk-taking: There is no great chance unless if it is behind a big risk, but there is a difference between calculated risk and the economic suicide.
- 2 – involves some challenges: challenges to sharpen the resolve and renewed energy and keep the mind advertent.
- 3 - reflecting excellence: the excellence of Dubai emirate, and its projects must reflect the excellence in concept and practice of good taste and luxury.
- 4 - reflect originality in design: some geometric designs derived from our environment and Arabic heritage
- 5 - the volatility of the prevailing concepts.
- 6 - Creates the markets.
- 7 - self-funded or through the appropriate marketing of financial instruments on the Dubai Financial Market or the international financial markets.
- 8 - requires new techniques and high expertise in implementation.
- 9 - completed in record time.
- 10 - reflect a high degree of collective effort and coordination between the operational teams.
- 11 - reflects the vision and mastery of catching opportunities and manufacture.
- 12 - include the ability to transcend self-crisis.

13 - bridge to other projects

14 - Arab additional contribution from Dubai for the abolition of the common perception in the West north of the existence of advanced and unique South and West and East does not distinguish it.

15 - proof that Dubai and the Arabs are able to implement global projects or prefer to match what is in the Arab or Japan.

16 - fired the imagination of the human person, because it contains a great deal of imagination in the idea and concept and achievement.

17 - integration: the working environment does not mean the traditional offices, computers and phones that ring does not stop. (p.168-169)

Dubai has a unique method of work: -1. development of vision. 2. Identification of goals. 3. Develop a plan. 4. Deciding of a short- term implementation plan. 5. The mobilisation of energies. 6. Tender for all concerned to start the project deployment. P . 170

What does it mean when we say “made in Dubai”?

It means that the work was carried out in accordance with the standards and specific requirements and specifications to include the following:

1. Excellence.
2. overcoming the impossible.
3. the melting effort in pot of success.
4. Case studies to civilisation.
5. making the chances for success.
6. Positive.
7. Innovative solutions.
8. Security and stability.
9. continuity.

Sometimes the best solution is the easiest. We want to simplify matters for companies and for ourselves and we want to achieve success as quickly as possible, so when companies decide to enter our market, we ask them to provide us with a list of the wishes, including their expectations and then try to achieve those wishes and consent laws, regulations and procedures and overcome all obstacles. p. 170-174

People's expectations do not stop and is not limited to an extent. Its is a revolving door and a changeable case. They always seek the best and most convenient therefore customers should be surprised by providing the best. p, 175 There is no one path to development, thus each state has to choose the appropriate way. There is no one way to implementation. For example, the establishment of Dubai Internet City has contributed to the focus of Arab attention to information technology, and the experience of e-government is adaptable, in its concept, structure and methodologies. That's why there are seven Arab governments electronically. p. 182

The case public sector reform is a very successful experiment and has to be and must be applied in all Arab countries, but the difficulties that apply to the excellence applies to public sector reform. (p.183) The secret behind community development is the development of the individual, and when you train the individual, you trained the society. p. 186 -187

Computer literacy was not an essential requirement for job opportunity before ten years ago. Now no longer is a feature in the race of excellence, and who can not deal with the computer can not work. p. 188

The Road to the Future: Race of Nations and Peoples

We must continue education and human resource development and the building up of popular participation, the development of parliamentary institutions of representative, support the leading role of the private sector and activate public sector by promoting transparency in all sectors to expand the circle of investment incentives to go beyond free zones and to support small and medium enterprises and the development of financing schemes for young entrepreneurs as a means of fighting corruption and Simplification of work procedures and Follow-up determination to provide quality and excellence in everything. p. 193

The strategic planning of human resources and development of the investment climate and improving the infrastructure and interest in the reform of legislation and regulations and strengthen the partnership between the public and private sectors and to know the views of the people and to highlight Dubai as an international centre of Excellence and creativity are prerequisites do not know an end, do not stop at an end, and we must continue to study the best ways to improve innovation and find new creative solutions to increase the

effectiveness and feasibility and its benefits. p. 193 Globalisation in my perspective is a global economic environment aimed at achieving a high degree in merging commercial financial activities and services and impose commitment to a set of principles and regulations and make profound changes not known to the world in the past. p. 199 No machine nor capital make prosperity and defeat impossible, but man. p.202

Success in this race requires preparation of generations that believe in Allah and then aware of their national commitments. Those hold high international qualification and Knowledge of various disciplines and various contemporary humanitarian sciences. This is by developing education curricula and upgrading of teachers' skills and proficiency in order to deal with modern technology and provide schools with an environment that stimulates scientific research and innovation and boost creativity based on evolving practical strategy which put education on top priority as cornerstone of an overall development towards prosperity. p. 202-203 Government must take initiative through the development of youth entrepreneurship development programme by embracing initiatives to overcome challenges to turn them from ideas to successful projects. p. 204 Continue our current direction of the economy, deepen the role of information age and the transformation of society to a knowledge society. p. 207 The Western world leads us in the economic side and not in civilisation. This leadership is based on the use of machine p. 223

Of our other goals:

- to make the UAE the place of choice for investment, business, trade, tourism, insurance and service in the next fifty years.
- Making the UAE the first in the knowledge economy, virtual markets and global hub of information technology through the development of national capacity and continue strategic partnerships building to attract important active entities in this sector and technology development companies, and those highly talented specialists in this field. p. 208-209

Appendix no. 12

Validation Instrument of Questionnaires and Structured Interview

An Instrument Establishing the Content Validity of the Questionnaires

Date

Dear Sir/ Madam:

The researcher has chosen you as an expert to evaluate the content validity of his research instrument (see attached) by indicating the rating on the space provided for. Please use the scale and the descriptive rating below.

Scale	Descriptive Rating	Extent of Description
A	Not valid at All	At least 20% of the items in the instrument are appropriate and relevant. Revise totally the instrument.
B	Not Valid	At least 40% of the items in the instrument are appropriate and relevant.
C	Moderately Valid	At least 60% of the items in the instrument are appropriate and relevant.
D	Highly Valid	At least 80% of the items in the instrument are appropriate and relevant.
E	Very Highly	At least 100% of the items in the instrument are appropriate and relevant.

Indicators Validity	Rating
1. The items in each concept are stated clearly.	A B C D E
2. The items in each concept are sufficiently inclusive.	A B C D E
3. The items in each concept correspond to the subject matter/ topic.	
4. The items in each concept is consistent to reality.	A B C D E
5. The items in each concept show a reasonable range of variation.	A B C D E
6. The items in each concept are correct and accurate.	A B C D E
7. The items in each concept are precise and exact.	A B C D E
8. The items in each concept could be applied specifically for the topic.	A B C D E

Thank you very much!

Waleed Rashed Ibrahim Al Bakr
Researcher

Table 43. Establishment of the Content Validity of the Questionnaire for Citizens/ Customers

Indicators Validity	EVALUATORS					
	1	2	3	4	5	Average
1. The items in each concept are stated clearly.	4	5	4	5	5	4.6
2. The items in each concept are sufficiently inclusive.	4	5	4	5	5	4.6
3. The items in each concept correspond to the subject matter/ topic.	5	4	5	5	5	5
4. The items in each concept is consistent to reality.	5	5	5	5	5	5
5. The items in each concept show a reasonable range of variation.	4	5	5	5	5	4.8
6. The items in each concept are correct and accurate.	5	5	5	5	5	5
7. The items in each concept are precise and exact.	5	5	5	5	5	5
8. The items in each concept could be applied specifically for the topic.	5	5	5	5	4	5
AVERAGE	4.63	4.88	4.80	5	4.88	4.84 96.8%

Table 44. Establishment of the Content Validity of the Questionnaire for Business Employees

Indicators Validity	EVALUATORS					
	1	2	3	4	5	Average
1. The items in each concept are stated clearly.	5	5	4	5	5	4.6
2. The items in each concept are sufficiently inclusive.	5	5	4	5	5	4.6
3. The items in each concept correspond to the subject matter/ topic.	5	4	5	5	5	5
4. The items in each concept is consistent to reality.	5	5	5	5	5	5
5. The items in each concept show a reasonable range of variation.	5	5	5	5	5	4.8
6. The items in each concept are correct and accurate.	4	5	5	5	5	5
7. The items in each concept are precise and exact.	5	5	5	5	5	5
8. The items in each concept could be applied specifically for the topic.	4	5	5	5	4	5
AVERAGE	4.80	4.88	4.80	5	4.88	4.87 97.4%

Table 45. Establishment of the Content Validity of the Questionnaire for Government Employees

Indicators Validity	EVALUATORS					
	1	2	3	4	5	Average
1. The items in each concept are stated clearly.	5	5	5	5	5	4.6


2. The items in each concept are sufficiently inclusive.	4	5	5	5	5	4.6
3. The items in each concept correspond to the subject matter/ topic.	5	4	5	5	5	5
4. The items in each concept is consistent to reality.	5	5	5	5	5	5
5. The items in each concept show a reasonable range of variation.	5	5	5	5	5	4.8
6. The items in each concept are correct and accurate.	5	5	5	5	5	5
7. The items in each concept are precise and exact.	5	5	5	5	5	5
8. The items in each concept could be applied specifically for the topic.	5	5	5	5	4	5
AVERAGE	4.88	4.88	5	5	4.88	4.92 98.4%

Table 46. Establishment of the Content Validity of the Structured Interview

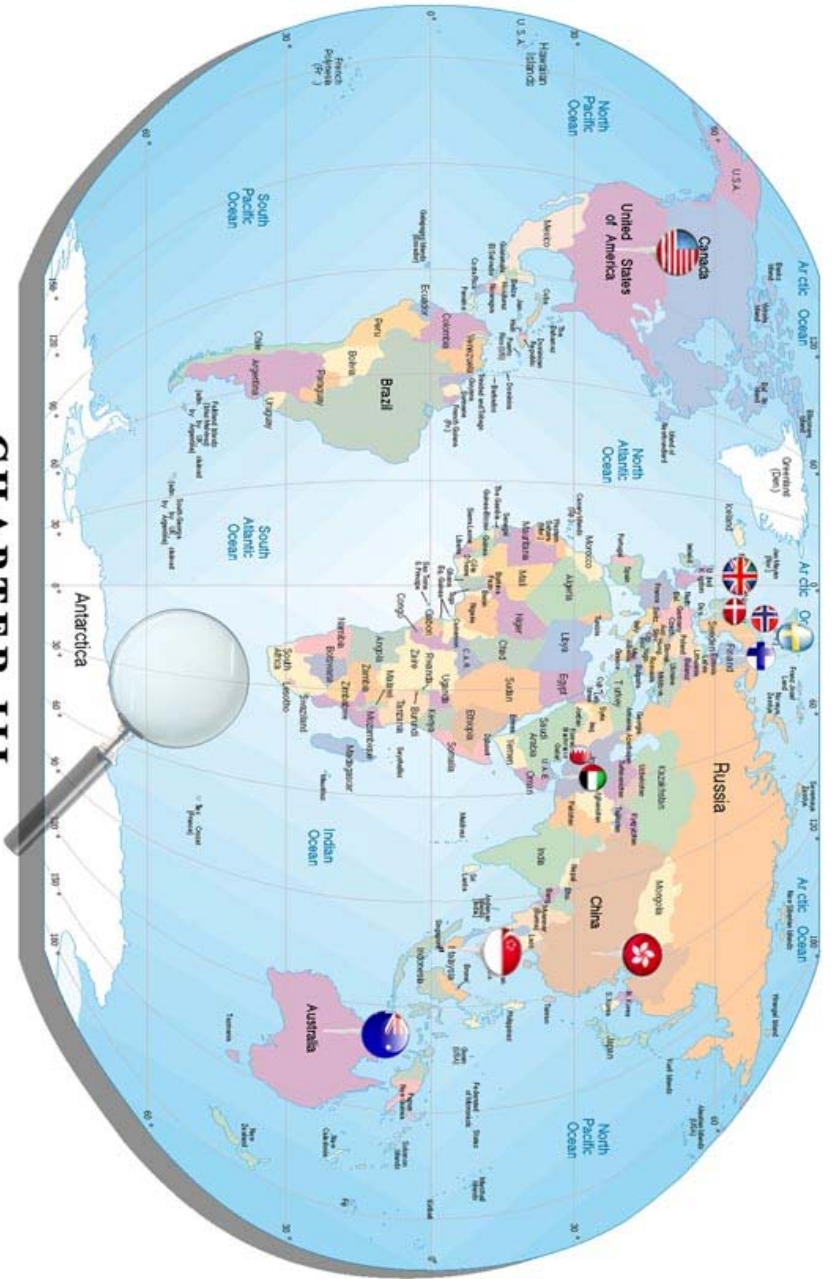
Indicators Validity	EVALUATORS					
	1	2	3	4	5	Average
1. The items in each concept are stated clearly.	4	5	5	5	5	4.6
2. The items in each concept are sufficiently inclusive.	4	5	5	5	5	4.6
3. The items in each concept correspond to the subject matter/ topic.	5	4	5	5	5	5
4. The items in each concept is consistent to reality.	5	5	5	5	5	5
5. The items in each concept show a reasonable range of variation.	5	5	5	5	5	4.8
6. The items in each concept are correct and accurate.	5	5	5	5	5	5

7. The items in each concept are precise and exact.	5	5	5	5	5	5
8. The items in each concept could be applied specifically for the topic.	5	5	4	5	4	5
AVERAGE	4.80	4.88	4.88	5	4.88	4.88 97.6%

Map of World showing Countries under Study

- | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |  |  |  |  |
| United States | Sweden | Australia | Hong Kong | Denmark | Singapore | United Kingdom | Norway | Finland | UAE | Bahrain |

CHAPTER III THE E-GOVERNMENT and the WORLD



Appendix no. 14

Timeline of ICT and Internet Revolution

1858 - Undersea telephone cables was established to carry instantaneous communications across the ocean for the first time but became a technical failure

1866 - Subsequent cables were successful and these became the first medium of instantaneous communication across borders

1957 - USSR launched Sputnik, the first artificial earth satellite

1958 – in just 18 months, the Explorer-I was made by the United State as its first successful satellite through the Advance Research Projects Agency (ARPA).

1963 - Licklider, who heads ARPA's research in improving the military's use of computer technology, outlined a vision about a time when communities of people with a common interest would be able to discuss online.

1968 - ARPA built the packet-switching for a worldwide network and successfully connected together a few geographically dispersed computers over a shared network; this computer network became known as the ARPANet.

1972 - Ray Tomlinson sent himself an email between two computers in his office and after a year wrote the basic email message and read software.

1973 - Bob Metcalfe developed Ethernet technologies which began as an outline of his thesis at Harvard.

1975 – The first personal computer, the MITS Altair 8800 was released. This was created by two young men from Harvard Paul Allen and Bill Gates

1979 - USENET (the decentralised news group network) was created by Steve Bellovin, a graduate student at University of North Carolina, and programmers Tom Truscott and Jim Ellis.

1980s - The abilities that ARPANet demonstrated especially with electronic mail urged numerous communities to develop networks. Also growing rapidly were numerous local area networks (LANs), due to Metcalfe's Ethernet technology. The LANs along with PCs and workstations allowed the burgeoning Internet to flourish

1985 - The Internet consisted mainly of email and some other applications allowed communication, and file sharing across the networks.

1985-1988 - CERN, the European Laboratory for Particle Physics in Geneva, expanded TCP/IP throughout their network CERNET.

1989 - CERN opened its first external connections to the Internet.

- Tim Berners-Lee, a CERN researcher implemented his "hypertext ideas" which became the foundation of the World Wide Web. Hypertext allows document creators to insert links and names to point to other relevant items

1994 - Brian Pinkerton introduced a small single-user application to find information on the Web, called The WebCrawler. It quickly became one of the Web's more popular search engines, as well as its first

- David Filo and Jerry Yang, students at Stanford University, started a guide to keep track of their personal interests on the Web. They named this guide "Yet Another Hierarchical Official Oracle" (Yahoo!)

1995 – Filo and Yang were offered a place for their site on Netscape's larger computers, which allowed Yahoo! to grow into the most popular site visited on the Web and has become the most profitable and popular online Web service

- Netscape Navigator 1.1 was unveiled which became the most popular navigator now available on the net

- Sun released Java development kit, a programming language tailored for the Web, with its write once run everywhere architecture.

- After their release of Windows 95 in August, Microsoft entered the browser market with their Internet Explorer 1.0

2009 - The world has 6,767,805,208 internet users.

Appendix no. 15

Timeline of eGovernment of Dubai

1999 - His Highness Sheikh Mohammed bin Rashed Al Maktoum (which will be known hereafter as Sheikh Mohammed) declared his vision of establishing an eGovernment that mandates governments department to bring their services online in only 18 months.

2001 - Sheikh Mohammed launched the official portal of Dubai eGovernment, www.dubai.ae which aims to provide online services and information for all citizens, residents, visitors, businesses and other government entities. It started with 14 eServices.
- Considered first Arab eGovernment .

2003 – Publication online and print of e4all, a magazine dedicated on promoting the eGovernment initiatives of Dubai.

2004 – Dubai eGovernment set eServices criteria to ensure customer satisfaction and reduce quality dissimilarity between departments.
- Launched of eEmployee that aims to raise IT competency levels of government employees to deliver world –class eServices. .

2005 – ePay Central Service of Dubai eGovernment matches world-class security standards. Dubai eGovernment has complied with "Visa Card" to update its ePay infrastructure to agree with the 3D Secure system. This process entailed changes in all ePay operational software in government institutions.

2007- Evaluation of www.dubai.ae, the portal of Dubai eGovernment as a centralised gateway for all government departments and services, resulted in these observations: first, poor classification where the search results were mixed and not classified, and second, the search results were not classified according to the department providing the eServices.

2008 – 90% of public services of most government services are available online.
- ePay generates AED 1 billion from 1 million transactions.

2009 - The study on digital governance in municipalities worldwide ranked Seoul,

Hong Kong, Singapore, New York and Shanghai as the top five cities. Dubai is 18th.

Dubai eGovernment initiatives became a government department of Dubai through a decree, Law no. 7 of 2009 issued by Sheikh Mohammed. This department aims at contributing to the building of a knowledge community through the government sector's advancement in electronic transformation and provision of innovative eServices to the different sections of society.

Appendix no. 15

GOVERNMENT STRATEGY

2011-2013 Putting Citizens First

An Accountable, Lean, Innovative, and Forward-Looking Government

OUR COMMITMENT

Dubai Government is committed to respecting your privacy and protecting your personal information. We recognize our obligation to keep sensitive information secure and have created this privacy and security statement to share and explain the current information management practices on our websites.

The handling of all personal information by Dubai Government departments and entities is governed by the UAE and Dubai privacy and security acts. We are committed to protecting your privacy whether you are browsing for information or conducting business with the government electronically.

COLLECTION AND USE OF ONLINE INFORMATION

When you visit our websites, we will not collect your personal information unless you choose to use and receive online products and services that require it. For transactions with government organizations involving credit cards, government systems use up-to-date security protocols to ensure the integrity and confidentiality of information and systems.

COLLECTION OF IP ADDRESS

Our web server automatically collects your IP address when you visit our site (your IP address is your computer's unique address that lets other computers attached to the Internet know where to send data, but does not identify you individually). We use your IP address to help diagnose problems with our server and to compile statistics on site usage.

USE OF COOKIES

Some Dubai Government Web sites use cookies. Cookies are generally used to make it more convenient for users to move around our Web sites. If you choose, they may be used to 'remember' your password and make it easier and faster to log-in to certain sites. These types of cookies need to be stored on your computer's hard drive. Cookies used by the government are encrypted to make the information in cookies unreadable to anyone except the government department with which you are dealing.

PROTECTION OF PERSONAL INFORMATION

Your personal information is available only to the government employees who have a need to know it. It will not be available for public inspection without your consent. Also, no site user information will be shared, sold, or transferred to any third party without your prior consent. Access is given only to those qualified professionals who provide Dubai Government services consistent with your interactions with our site.

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