

# **E-GOVERNANCE IMPLEMENTATION IN TOWNSHIP LEVEL IN MYANMAR**



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July 2015**

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**BRAC University, Dhaka, Bangladesh**  
**July 2015**

*Dedicated*  
*To My beloved Wife and*  
*My Parents*

## CERTIFICATE

This is my pleasure to certify that the dissertation entitled “**E-Governance Implementation in Township Level in Myanmar**” is the original work of PHONE THANT that is completed under my direct guidance and supervision. As far as I know, the dissertation is an individual achievement of the candidate’s own efforts, and it is not a collaborative work. I also certify that I have gone through the draft and the final version of the dissertation and found it satisfactory for submission to the BRAC Institute of Governance and Development, BRAC University in partial fulfillment of the requirements for the degree of Master in Governance and Development of BRAC University.

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# DECLARATION

I hereby declare that the dissertation entitled “**E-GOVERNANCE IMPLEMENTATION IN TOWNSHIP LEVEL IN MYANMAR**” submitted to the BRAC Institute of Governance and Development, BRAC University for the degree of Master of Governance and Development is exclusively my own and original work. No part of it in any form, has been submitted to any other University or Institute for any degree, diploma or for other similar purposes.

## **PHONE THANT**

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## ABSTRACT

At the edge of globalization and technological advancement, public sector administration has to face an immense pressure. To cope with the mounting pressure the government has to be prompt, responsive, transparent and citizen-centric. It is beyond doubt that ICT backed government can ensure the desired services of the citizens and thus ICT integrated E-governance has become a fashionable phrase to articulate the citizens' demand to a reality creating values to their life. Keeping this in mind, the study has made an attempt to assess the e-readiness level of Township Administration of "TAMU" as a functional unit of field level bureaucracy from the perspective of both the officials and the beneficiaries. It has also attempted to identify the major factors that hinder the e-readiness initiatives of "TAMU" Township.

For the purpose of the study, primary data are collected by using questionnaire survey and interview method. Then the findings from the primary data have been cross verified with the benchmark of the "UN Five Stage Model of E-Governance" to have an overall scenario of e-readiness of Township Administration of "TAMU" Township. In the study lack of electricity, human capital, lack of infrastructure and logistics, web presence and citizens' perception of beneficiaries are taken into consideration as independent variables for verifying the dependent variable, E-governance Readiness. The study reveals that the capability of officials in using computer is not up to the mark and their utilization level of computer facilities at workplace is considerably low. Also their electricity distribution power is too low. In case of infrastructure and logistics, it is found that the offices have not reasonable support of infrastructure and logistics and the trend in using computer and internet by the employee is gradually low. So, lack of infrastructure and logistics has deemed to be minimal effect on e-readiness at the field level administration right now. As per web presence concerned, the study reveals that every office has not website of its own. In context to perception of the beneficiaries, it is observed that most of the beneficiaries or the citizens are aware of the need of use of ICTs in the public administration. Nonetheless, they are found to be not satisfied in terms e-service delivery. The overall level of E-governance readiness of Township Administration of "TAMU" is at the Emerging stages of "UN Model". This study comes up with some recommendations such as increase electric power distribution, development of human capital, increasing of the speed of Internet, and adopting arrangements for narrowing down the digital divide between the center and the periphery.

# ABBREVIATIONS

ADB	Asian Development Bank
EDMS	Electronic Document Management System
EU	European Union
G2B	Government-to-Business
G2C	Government-to-Citizen
G2E	Government-to-Employee
G2G	Government-to-Government
GPMS	Government Personnel Management System
ICT	Information and Communication Technology
IT	Information Technology
ITSS	Information Technology Skill Standard
LAN	Local Area Network
MCF	Myanmar Computer Federation
MCIT	Ministry of Communication and Information Technology
MCPA	Myanmar Computer Professional Association
MPT	Myanmar Posts and Telecommunications
NGO	Non-Government Organization
PC	Personal Computer
SPSS	Statistical Packages for Social Sciences
UN	United Nations
WAN	Wide Area Network



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# CHAPTER - 1

## *INTRODUCTION*

### **1.1 Background**

One of the basic policies of democratic governance around the globe is to decrease the administrative size, costs and to increase the functionality of government body. This is the motivation behind research activities within governments for utilizing them to new methods and technology. Based on this fact, the target of these kind of governments can be considered as proper use of information and communication technology in public administrations combined with an organizational change and new skills in order to improve public services and strengthen support to public policies. This leads us to the e-Government concept which is commonly defined as continuous and safe execution of the mutual duties and services between government and citizens in the environment of electronic communication and transaction. Obviously, based on these definitions, one can consider e-Government concept as a proper basis of good and efficient governance, keeping in mind that e-Government is more about government than about electronics.

E-Government has become an explicit component of public sector reform, as an instrument to “increase efficiency, strengthen competitiveness and enhance modernization”.<sup>1</sup> E-Government means different things for different people. Some simply define it as digital governmental information or a way of engaging in digital transactions with customers. For others e-Government simply consists of the creation of a web site where information about political and governmental issues is presented. Furthermore, e-Government has attracted the attention of politicians, scientists, and statesmen of the world in the recent years and hence has been extensively approached by governments in many countries, many of whom have devoted considerable efforts and resources for its implementation. The term e-Government is quickly becoming one of the hottest topics among government officials. As e-Government is such a growing topic that affects everyone, it is important for the public to be informed. Myanmar citizen uses the Internet every day for various things. They shop online, pay bills online, and do research online. Now they can even renew their company license, search for unclaimed property, and even pay some of their taxes. The use of the government (local, state, and

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<sup>1</sup> E-Government in the EU in the next decade: The vision and key challenges Based on the workshop held in Seville, 4-5 March (2004) “e-Government in the EU in 2010: Key policy and research challenges” EUR 21376 EN

National) online is called e-Government. However, citizens of Myanmar do not fully understand what e-government is, what the government is doing to protect confidential information, and why the government must maintain such secure sites.

Developments in Information Technology (IT) are changing all aspects of societies. One of the most important ones is the e-Government services. This technological revolution is also enabling the introduction of new services, better and faster delivery of existing ones and cheaper and more effective communications between different parties. E-Government presents challenges and opportunities to transform both the operational process of government, and the nature of governance itself. It impacts on most functions in government and agencies, the private sector and civil society. In the long term, it has the potential to positively change the government operations and the interaction of citizens and businesses with government. Therefore, each government needs appropriate strategy and planning in order to implement e-governance successfully.<sup>2</sup>

Today, in this competitive world, government and citizen private information and data are supposed to be secured and the quality of the government services given to citizen should be increased. For this, ICT is playing a critical role in the daily lives of citizens and functionalities and performances of government in enhancing and revolutionizing the government services to government and citizens in doing businesses. ICT applications are made to promise to enhance the delivery of public goods and services to citizens not only by improving processes and management skills and style, but also by redefining and reforming the traditional style and concepts of citizenship and democracy.<sup>3</sup>

On the other hand, ICT and all its technologies are very powerful tools that can sharply increase the possibilities of establishing, implementing, and developing e-Government and its services which will enable transforming the governmental processes in serving citizens (G2C), businesses (G2B), governments (G2G) employee (G to E). Therefore, ICT have gained significant importance in modern world and various countries. ICT as a supporting tool that can increase the participation of all people of the society in social changes through establishing

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<sup>2</sup> Abdollahi, A. Fasanghary, M. Azadnia, M., (2009). A Foresight based Framework for E-government Strategic Planning, Journal of Software Vol .(4), No . 6, pp 544-46.

<sup>3</sup> Nikkhahan, B., Jangi Aghdam, A., Sohrabi, S., (2009). E-government security: A honeynet approach. International Journal of Advanced Science and Technology Vol .(5), pp .75-84.

e-Government. Hence, employing e-Government make it increasingly possible for all people to access public information and prosper in economic and social fields.<sup>4</sup>

E-Government promises to improve the overall functionalities and businesses of any government; however this vision is not without several serious obstacles. The complexity of implementing and maintaining e-Government to promote these services are increasingly high that in most governments, achieving a true e-Government is extremely hard and in some cases impossible. Country such as Myanmar with various obstacles is the best example for this dissertation. Problems to implementing and improving of existing e-Government prevent this country to be able to well establish e-Government services and features.<sup>5</sup>

Like many other countries of the world, the application of Information and Communication Technologies (ICTs) in the field of Public Administration has considered as an effective tool for achieving transparent, responsible, accountable, participatory and connected governance. At present government, more precisely, is expected to be more transparent in its dealings, accountable for its businesses and faster in its responses. This expectation from the government has paved the way to using Information and Communication Technologies (ICTs) in the day-to-day business of the governance. Literally, **“E-Government’ is about delivering government services using information technologies, whereas ‘E-Governance”**<sup>6</sup> is about transforming the relationship between governments and their citizens through the use of information technologies. In addition, E-governance is a process of modernizing governance through use of ICTs for good governance and democratic governance that requires ensuring greater convenience and better services for all citizens and that ultimately leads to a knowledge-based society.

Further, different organizations define the term E-governance to suit their own aims and objectives. E-governance refers to the use by government agencies of information technologies (such as Wide Area Networks, the Internet, and mobile computing) that have the ability to transform relations with citizens, businesses, and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through

<sup>4</sup> Fallahi, M., (2007) The obstacles and guidelines of establishing E-government in Iran, MSc. Thesis, Luleå University of Technology, Sweden, available online at: <http://epubl.ltu.se/1653-0187/2007/052/LTU-PB-EX -07052-SE.pdf>

<sup>5</sup> Sarpoulaki .M., Eslami Rad .A., Saleknia .A., 2008. E-Government concept and spatial information: A case study in Islamic republic of Iran. The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, [e-journal] XXXVII /B4, 19-23 [Accessed Sep 6, 2010]

<sup>6</sup> <http://egov.comesa.int/index.php/e-government-resouces/31-relationship-between-e-government-ict-and-e-governance>

access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions. Furthermore, Governance refers to the exercise of political, economic and administrative authority in the management of a country's affairs, including citizens' articulation of their interests and exercise of their legal rights and obligations. E-governance may be understood as the performance of this governance via the electronic medium in order to facilitate an efficient, speedy and transparent process of disseminating information to the public, and other agencies, and for performing government administration activities. However, E-governance has become a promising and fundamental issue in the contemporary development debate of developing countries and has changed the way of living, the way of thinking and the way of designing social, political, economic and administrative aspects of the state tremendously. The contribution of information and communication technologies (ICTs) to administration has led to believe that E-Government could bring about the realization of democracy through more direct forms of people's participation and make administration more people and service oriented, transparent and accountable.<sup>7</sup>

The E-governance readiness of a country thus refers to the ability to use information and communication technologies (ICTs) to develop one's economy and to foster one's welfare. Likewise, it comprises social, cultural, psychological, economic and legal aspects along with the most commonly perceived aspects of technology.

## **1.2 Problem Statement**

The pervasive usage of ICTs in the public sector of Myanmar has become evident through the political agenda of "Myanmar e-governance ICT Master Plan" that subsequently has got an official fashion as "perspective plan". That plan is citation ICTs in the public sector to establish a transparent, responsive and accountable government. For active participation in the process of E-governance, the Township administration should have a good preparation and that's why it is very crucial at these days to assess the e-readiness level of field administration. Thus, an in-depth analysis of E-governance readiness of field administration mainly the Township Administration would provide an invaluable insight in the urgency of translating the vision of E-governance into a reality.

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<sup>7</sup> [http://theglobaljournals.com/gra/file.php?val=August\\_2012\\_1345115007\\_c785b\\_22.pdf](http://theglobaljournals.com/gra/file.php?val=August_2012_1345115007_c785b_22.pdf)

### **1.3 Research Objectives**

This research attempts to identify the linkage between the government and citizens in Myanmar, for creating conducive environment for effective implementation of e-governance and factors relating to good governance. Thus, the study strives to attain the following objectives:

1. To know the effectiveness of the e-governance service delivery at the Township level in Myanmar.
2. To evaluate the impacts of e-services to the service receivers or citizens at the level of Township in Myanmar.

### **1.4 Research Questions**

The basic purpose of this research is to see what kind of services citizens are getting through e-Government in Myanmar and what are the needs of citizens and how to address them through ease. In order to achieve said purposes, the following research questions should be scrutinized. Therefore, the research study is carried out with the following research questions:

1. How effective are the E-government services in a Township in Myanmar?
2. What are the e-Services expectations from e-Government by the citizens of Township Level?
3. How can the needs and expectations of the citizens be met to provide better services?

### **1.5 Scope of the Research**

The core intention of e-governance is to allow the public sector to provide citizens with information based on their needs. Along these lines, this research has focused on the involvement of e-government tools in enhancing the efficiency of public organizations and its implication among citizens through e-service delivery that lead to improve good governance. The study thus analyzes the quality of the e-governance progression. In addition, the level of citizens' satisfaction has framed under the research and it's it has been compared with the traditional style of governance. Lastly, the research intends to identify and establish linkages between e-governance service standards and citizen satisfaction on the way to better governance those performances are determined by the efficiency of e-service delivery.

## **1.6 Research Methodology**

In general, research methodology is the way of achieving the research objectives. It primarily focuses on the methods, tools and techniques of data collection. The instruments for gathering data also fall within the definition of methodology of a research (Aminuzzaman: 1991). This chapter provides the methods and techniques of collecting data along with the rationale of selection of the study area.

## **1.7 Selection of the Study Area**

For the purpose of this study, we had chosen “TAMU” Township in Myanmar. As it is Office Township of the researcher and e-Government service there are very low. So the people who live in “TAMU”, get few e-services. Therefore, we have selected that area for as study area of this research.

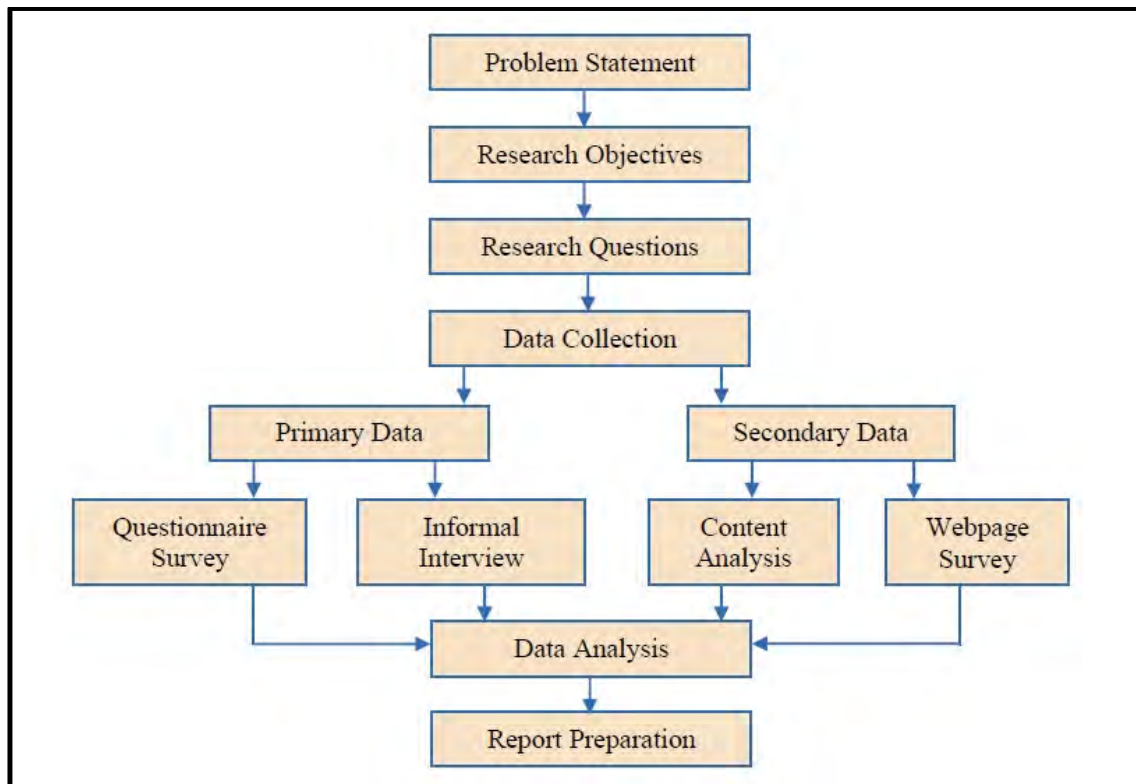
## **1.8 Methods**

Assessment of E-governance Readiness and identifying its influencing factors is an exploratory one using both qualitative and quantitative data. In other words, for drawing some inferences on the findings, it is necessary to analyze the collected data quantitatively. So, a combination of qualitative and quantitative approach is applied here to achieve the objectives of this study.

In this research, the following methods are used:

1. Content Analysis
2. Interview (Face-to-Face Interview)
3. Questionnaire Survey

**Figure (1.1) Overview of the Research Design and Its Components**



### 1.8.1 Content Analysis

Content Analysis includes collecting data from all relevant books, documents, articles, journals, published and unpublished research works and online articles that are found to be available.

### 1.8.2 Interview

I used telephone, web, email, and chatting interview method. The main objective of the interview method is to collect information about the perception of the citizens or beneficiaries regarding E-governance Readiness of township Administration.

### 1.8.3 Questionnaire Survey

The semi-structured questionnaire survey method is conducted in this research with an intention to collect primary data about E-governance Readiness in the Township Administration of “TAMU” and also to find out the probable impediments that hinder the e-readiness at field level.

## 1.9 Sources of Data

The data have been collected for this study from both primary and secondary sources in “TAMU” Township. Secondary data are gathered from the existing literatures such as books, newspaper reports, previous research works, seminar papers, reports etc.

Primary data are collected through interview and questionnaire survey. The officers’ class one and office assistants/ computer operators are brought under the questionnaire survey and the citizen/beneficiaries are brought under the interview method for drawing primary information.

## 1.10 Data Collection Techniques

Data are collected through interview and questionnaire survey method. In-depth interview has been conducted through semi-structured questionnaire. Two sets of questionnaire have been used to collect primary data, one for the officials and the other for the beneficiaries.

## 1.11 Sampling

Due to resource and time constraints all the employees working in the offices of the Township Administration of “TAMU” could not bring under the research work. The random sampling is being used to choose the respondents for the purpose of the questionnaire survey. Three strata have been chosen from each of the study areas namely class one gazetted officers, office assistants/ computer operators and some beneficiaries of both offices.

## 1.12 Sample Size

A total 40 (forty) respondents has been selected from the three strata.

**Table (1.1) Composition of the Respondents**

Study Area	Stratum	Number of Respondents
Township Level Office and Citizens	Gazetted Officers,	20
	Office Assistants/Computer Operators	
	Beneficiaries	20
Total		40



The class one gazetted officers are actively involved in the process of decision making and the office assistants/ computer operators are actively involved in initiating the files that are directly related to communications. So they comprise a significant part of the sample. On the other hand, the citizens/ service seekers are the heart of the E-governance, and thus they also comprise a dominating part of the sample.

### **1.13 Data Validation**

The collected data have been validated through cross checking with each other and with the secondary data sources.

### **1.14 Data Analysis Technique**

The data are collected from both primary and secondary sources. The collected data are then consolidated, processed and analyzed by using various statistical tools and techniques. In this study Statistical Packages for the Social Sciences (SPSS), MS-Word and MS-Excel are mainly used to process and analyze the data.

### **1.15 About TAMU Township**

“TAMU” is a small border town at the Myanmar-India border. “TAMU” has a total area of 839.2 square kilometers (511.71 square miles). It lies between latitudes 24°13'0"N and longitudes 94° 19'0"° E°. It is located at the Kabaw valley of Sagaing Division and connected to Moreh, India, by a bridge crossing over Mahuyar creek. It had a population of over 106,000 and 407 official government staff.

The town is flourishing steadily after the bi-lateral trade agreement signed between Myanmar and India governments in 1994. After a decade later, the newly opened Monywa-Yagyi-Kalaywa motor road significantly shortens the length of travelling from “TAMU” to Mandalay which reinforces the already flourishing border trading. The town nowadays is not only a place to trade the goods from Myanmar and India but also trade the goods from Thailand and China to India and vice versa.

### **1.16 Limitations of the Study**

Like other research, the present study has some limitations. The research is restricted to interactive-service model only instead of other four generic models of e-governance. Citizen

centric approach has to comply instead of the agency-centric approach in the conceptualization of public service delivery. The study also limited to analyze the e-service sphere only but other domains of e-governance scum spectrum like e-administration and e-society are not reflected here on. It is to be noted that this study's sample 40, represents 0.04 percent of the total population of the "TAMU" Township and from service providers represents (5%) percent of service providers in the township, as time and resources during this study did not allow a greater sample size. However, this sample would give an indication of the overall scenario of e-governance at the township level in Myanmar. Moreover, the study has focused on the Government-to-Citizen (G2C) forms of e-government while Government-to-Government (G2G) and Government-to-Business (G2B) are being apart thus necessitates to further in-depth study.

### **1.17 Organization of the Study**

This study is structured with five chapters.

The first chapter explains the study background, problem statement and its justification. It specifies the research objectives, research questions with the scope, and limitations of the study. This chapter also covers the research methodology that contains the brief description on study area, method, source of data, data collection, sampling and size, data validation, and data analysis along with the test of reliability and correlation analysis of the variables. Then this chapter ends with the organization of the report.

The second chapter reviews the relevant literature and contextualizes perspectives, which covers conceptual framework, theoretical background, empirical evidences on e-governance, e-government and the analytical framework along with the variables of this study.

The third chapter explains an overview of E-Government in Myanmar, Myanmar Current State Assessment, Assessment of e-Government Organization and Capacity, Assessment of ICT and e-Government Policies, Myanmar's Current State, Proposed Target e-governance State, IT Policies, and Way Forward.

The fourth chapter analyzes the data and variables as well as relationships among the variables. This chapter provides the descriptive statistics, comparative and gap analysis of each item of e-governance, level of citizen satisfaction and advancement of good governance along with the reliability test, and correlation analysis of the variables.

The fifth chapter provides the recommendations with a brief discussion on the study. It contains a model of linkage among the variables along with the summary of the hypotheses and the research proposed a model of public service delivery.

## **CHAPTER - 2**

### ***REVIEW OF LITERATURE***

This chapter reviews the relevant literature and contextualizes perspectives, which covers conceptual framework, theoretical background, empirical evidences on e-governance, e-government and the analytical framework along with the variables of this study.

#### **2.1 E-Governance: Conceptual Overview**

The concept of “E-Governance” emerges as an application of electronic means in the interaction between government and citizens, government and business, and in the internal governmental operations to simplify and improve various aspects of governance. Two major dimensions of E-governance such as first, application of E-governance that fit to the demands and expectations of an emerging information society and second, application of ICTs for facilitating governance functions and activities.

Since long both information and technology were being used by governments in their internal communications, interactions and processing functions. At present, governments are organized around agencies and bureaucracies with little information flow within themselves. The essence of new model of information and communication technologies appeared as a key enabler of today’s reinvented government, where the old model of IT moved to a new model of ICTs or E-governance. The old model was one of the information and technology (IT) automating the internal workings of government by processing data whereas the new model is one of information and communication technologies (ICTs) supporting and transforming the external workings of governance by processing and communicating data. By using ICTs more and more, government has become connected government that is connected within government, with private sector, with civil society, and more importantly with citizens.

The concept “E-Government” primarily lies in streamlining of the administrative processes with a view to achieving greater efficiency and effectiveness and secondarily on some online services to the citizens.<sup>8</sup> E-governance, however, is a broader term that includes transformation on at least four levels. Such as first, it involves the transformation of the business of government (e-government); secondly, it involves a transformation in the operational definitions of the principles upon which governance is founded, shifting towards increased participation,

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<sup>8</sup> Backaus, M. (2001), E-Governance and Developing Countries: Introduction and Examples. IICD Research Brief, Vol. 1. March.

openness, transparency, and communication,<sup>9</sup> thirdly, it involves a transformation in the interactions between government and its (internal and external) clients, classified as government-to-citizen (G2C), government-to-business (G2B), government to its internal employee clients (G2E), and government to other government institutional clients (G2G). Finally, it involves a transformation of the society itself, though the emergence of connections, as well as relations among NGOs, built and sustained using electronic means.<sup>10</sup> Researchers have a consensus on some of the common areas. Achieving the concrete objective of supporting and simplifying governance for all parties' government, citizens and businesses through online services and other electronic means, E- Governance uses electronic means to support and stimulate good governance.

## **2.2 Definition of Key Terms**

### **2.2.1 E-Government**

“E-Government” refers to a situation where government bodies and agencies are automated and interconnected through ICTs interacting with each other and performing their day-to-day work electronically. In addition to this, it also maintain electronic communication channel to interact with business and citizen.<sup>11</sup>

However, the terms e-government and e-governance are closely associated with each other having different meanings. As these two terms are often used interchangeably, it might not have been possible in the study always to follow a strict boundary line between these terms.

### **2.2.2 E-Governance**

“E-Governance” is modernizing governance through use of ICTs for good governance and democratic governance that requires ensuring greater convenience and better services for all citizens and ultimately leads to a knowledge-based society.<sup>12</sup>

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<sup>9</sup> Schiavo-Ocampo & Sundaram, (2001)

<sup>10</sup> Pablo & Pan, (2002)

<sup>11</sup> <http://www.egov4dev.org/success/definitions.shtml>

<sup>12</sup> E-GOVERNANCE IN BANGLADESH : INITIATIVES AND CHALLENGES. [https://www.academia.edu/7661916/E-Governance\\_in\\_Bangladesh](https://www.academia.edu/7661916/E-Governance_in_Bangladesh)

### **2.2.3 E-Service**

“E-Service” refers to any service that is provided by any electronic means e.g. Internet/website, mobile devices. According to Goldkuhl & Persson (2006a), e-service means that an external user (a citizen) interacts through a user interface of a public IT system based on web technology. Rowley (2006) defined e-services as “deeds, efforts or performances whose delivery is mediated by information technology (including the web, information kiosks and mobile devices)”.

### **2.2.4 E-Readiness**

“E-Readiness” means a favorable environment imperative for successful implementation of E-governance. In this context, E-Readiness refers to the readiness of both supply side and demand side.<sup>13</sup>

### **2.2.5 Supply Side**

“Supply Side” refers to the officials (both officers and office assistants) of Public Administration who are the main driving force of E-governance.

### **2.2.6 Demand Side**

“Demand side” refers to the beneficiaries/citizens who are the end users of e-government services.

## **2.3 E-Governance Relationship Model**

E-Governance has four major relationship components and these are G2C (Governance to Citizen), G2B (Governance to Business), G2G (Government to Government), G2E (Government to Employee).

### **2.3.1 G2C (Governance-to-Citizen)**

This model involves interaction of individual citizen with the government. It provides citizens greater access to government information through making available online laws, regulations, forms and data. It also promotes civic engagement by enabling the public to interact more easily

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<sup>13</sup> E-GOVERNANCE IN BANGLADESH : INITIATIVES AND CHALLENGES. [https://www.academia.edu/7661916/E-Governance\\_in\\_Bangladesh](https://www.academia.edu/7661916/E-Governance_in_Bangladesh)

with government officials for obtaining license, certificates, filing tax return etc. Moreover, it allows customers to access government information and services promptly and more conveniently from anywhere else of the country.<sup>14</sup>

Government to Customers is the online non-commercial communication between local and central government sectors and the consumers of the government services. The consumers who are the private individuals. In this model, government sectors or agencies public services are actively and visibly available to citizens. Public services and its information are fully accessible to the citizens.<sup>15</sup>

### **2.3.2 G2B (Governance-to-Business)**

It involves interaction of business entities with the government. In this model government serves as an enabler of economic activities, a customer of commercial goods and services, and as the regulator of both domestic and international trade and commerce, for instance, e-procurement and development of an electronic market place.

Government to Business is the online non-commercial model that makes the communication between the local and central government and the commercial business sectors (production and services) available rather than the private individual. In this model, by the use of e-Business technologies, better communication possibilities occur and therefore, reduce the government's problems on doing businesses by eliminating the collection of the redundant businesses data and information.<sup>16</sup>

### **2.3.3 G2G (Government-to-Government)**

This model defines the relationship between government offices and its other branches, and also involves interaction with the governments of other countries. Governments depend on other levels of government within the country to effectively deliver services and to allocate responsibilities. Besides, the governments want to engage in ongoing interactions with foreign states and international organizations for further political and economic goals.

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<sup>14</sup> <http://www.igi-global.com/dictionary/government-to-citizen-g2c/12392>

<sup>15</sup> Ndou, V., M., (2004). E-government for developing countries: opportunities and challenges, *The Electronic Journal on Information Systems in Developing Countries*, Vol. 18, No. 1, pp 1-24.

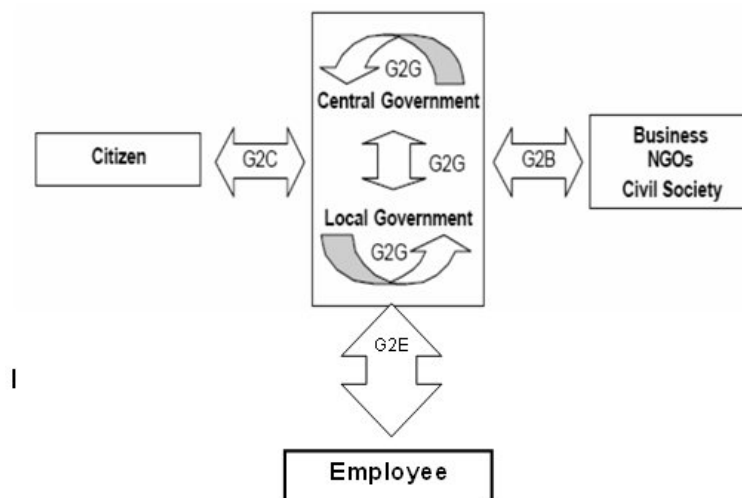
<sup>16</sup> Fallahi, M., (2007). The obstacles and guidelines of establishing E-government in Iran, MSc. Thesis, Luleå University of Technology, Sweden, available online at: <http://epubl.ltu.se/1653-0187/2007/052/LTU-PB-EX -07052-SE.pdf>

Government to Government is the online non-commercial model that makes the interactions and communications between government organizations, departments, and authorities available with other government organizations, departments, and authorities. Government electronic and IT administration is responsible and tasked to guide and support the government departments, organizations, and authorities to in the process of policy making and communication through the use of ICT . On the other hand, this model improves programs and services delivery because more accurate data and information exist by the cooperation of other government organizations.<sup>17</sup>

### 2.3.4 G2E (Government-to-Employee)

This model involves interaction between the government and its employees. It provides employees the opportunity to assess information regarding compensation and benefit policies, training and learning opportunities, civil rights, laws etc. G2E also refers to strategic and tactical mechanisms for encouraging the implementation of government goals and programs as well as human resource management, budgeting and accounting. Source: (Taifur, 2006 and Valentina, 2004).

**Figure (2.1) Components of E-Governance**



**Source: Prakash (2010)<sup>18</sup>**

<sup>17</sup> Sharifi, H., Zarei, B., (2004). An Adaptive approach for implementing e-government in Iran, MSc. Thesis, The University of Liverpool Management School, Chatam Building, Liverpool L69 7ZH, UK, Sharif University Graduate School of Management, Sharif University of Technology, .Sohrevarad Boulevard, Tehran, Iran.

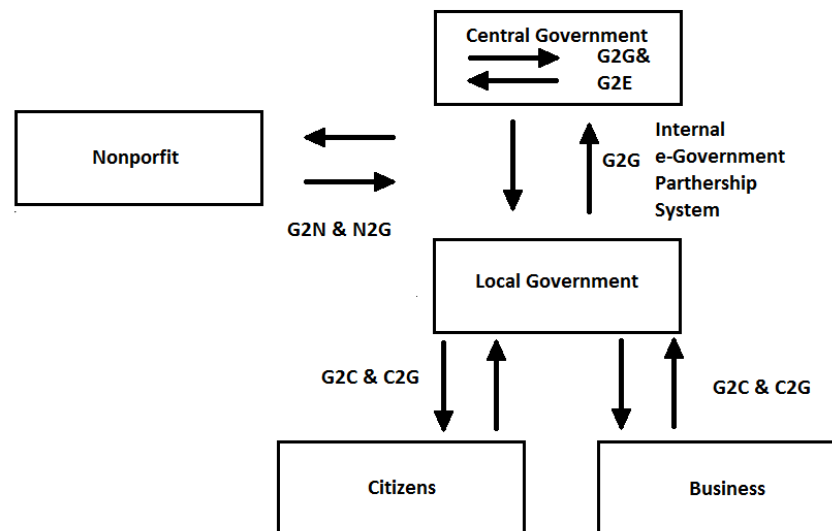
<sup>18</sup> <http://prakashneupane.com.np/egovernance-introduction/>



Further, Zhiyuan Fang developed a broad schematic system of E-Government Model that encompasses G2G, G2C, G2B, G2E and G2N. The details of these components are Government to Citizen (G2C), Citizen to Government (C2G), Government to Business (G2B), Business to Government (B2G), Government to Employee (G2E), Government to Government (G2G), Government to Non-profit (G2N) and Non-profit to Government (N2G). Eight categories of above stated e-government partnerships are further summed up into five consumers to government relationships: Citizens to Government, Business to Government, Government to Non-profit, Government to Government and Government to Employee.<sup>19</sup>

However, these e-governance relationship aspects can be expressed under three broad categories such as G2G, G2B and G2C. G2G defines relationships between different levels and branches of government, government and employees and foreign countries and international agencies; G2B defines relationships between government and markets and with the private sector; and G2C defines relationships between government and citizens, NGOs and the civil society. These three relationships have their corresponding interfaces in the governance system relationship.

**Figure (2.2) A Broad Schematic System for E-Government Models**



**Source: Fang, Zhiyuan: (2002), (“E-Government in Digital Era: Concept, Practice, and Development”)<sup>20</sup>**

<sup>19</sup> Zhiyuan Fang, "E-Government in Digital Era: Concept, Practice, and Development".

<sup>20</sup> <http://paperofinformationsystem.blog.binusian.org/category/e-government-in-saudi-arabia/>

## **2.4 Stages of E-Governance**

The United Nations Organization has conducted a survey on e-governance readiness entitled as “Global E-Government Readiness Report 2004’ and suggested a ‘five stages model’ of E-Governance readiness, which are as follows:

### **2.4.1 Stage I-Emerging**

A government’s online presence is primarily comprised of a website and on that web page some archived information such as the head of the states’ message or a document such as the constitution of the country may be available. In this stage, most of the information remains static with the fewest options for citizens.

### **2.4.2 Stage II-Enhanced**

Governments provide more information, whether it is current or archived information, on public policies, laws and regulations, reports or any other downloadable databases. At this stage, the users can search for a document and there a helpline and a site map are provided for convenient usages of the website.

### **2.4.3 Stage III-Interactive**

At this stage, governments deliver online services such as downloadable forms for tax payments and applications for license renewal. Beside this, an interactive web portal with services is furnished here to enhance the convenience of citizens.

### **2.4.4 Stage IV-Transactional**

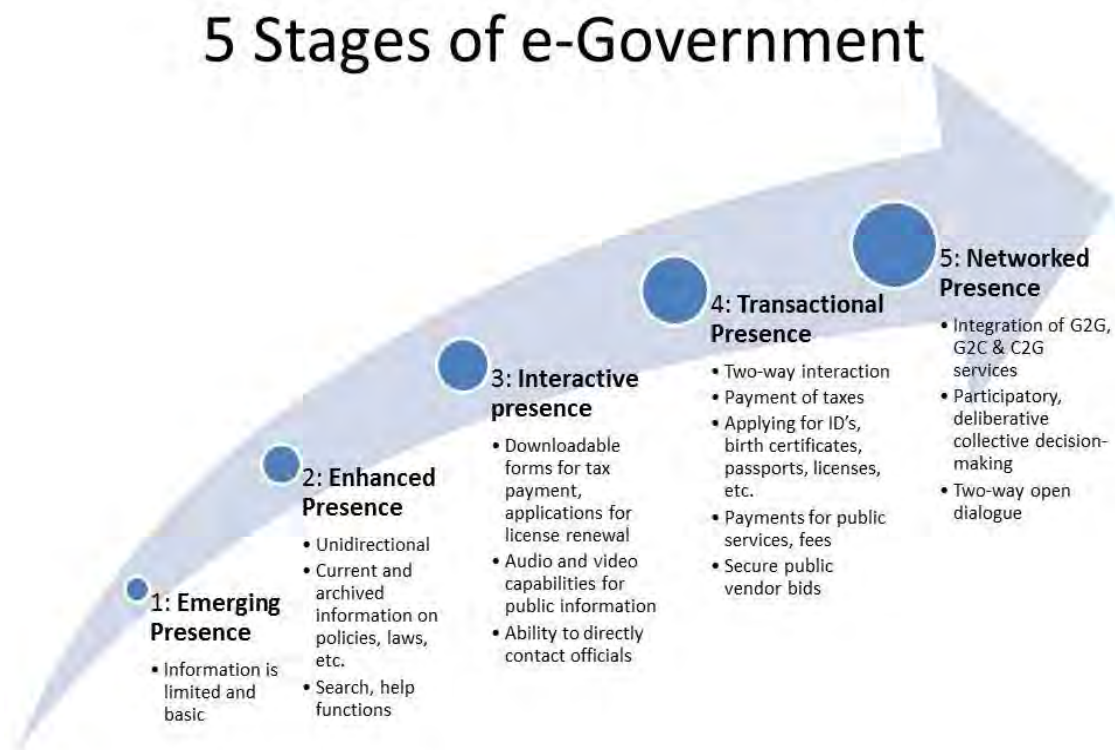
At this stage, governments introduce a two-way interaction between citizen and government. It includes options for paying taxes, applying for ID cards, birth certificates, passports, debit card, credit card and license renewal and such other services. It also allows the citizens to access these services online 24 hours 7 days.

### **2.4.5 Stage V-Connected (Networked)**

At this stage, governments transform themselves into a connected entity that responds to the needs of its citizens by developing an integrated back office infrastructure. This is the most sophisticated level of online E-Government initiatives and is characterized by:

- 1 Horizontal connections (among government agencies)
- 2 Vertical connections (central and local government agencies)
- 3 Infrastructure connections (interoperability)
- 4 Connections between governments and citizens
- 5 Connections among stakeholders (government, private sector, NGOs and civil society).<sup>21</sup>

**Figure (2.3) Stages of E-Governance (E-Government Fifth Level Sophistication)**



**Source: (Segovia, 2009)<sup>22</sup>**

## 2.5 E-Readiness Measures: Theory for the Present Study

Many institutes develop different measuring indices of E-governance readiness throughout the world. Some of the used measures are presented below.

<sup>21</sup> Source: As suggested by European Union (EU)

<sup>22</sup> <https://mjtowns1.wordpress.com/what-is-e-government/>

- A. Since 2001 the United Nations Department of Economic and Social Affairs (UN-DESA) has been conducting surveys on the global state of E-Government development on the basis of following composite indices:
1. Web measure index
  2. Telecommunication infrastructure index
  3. Human capital index.
- B. Brown University Assessment is a global survey covers the largest number of countries and the following set of measuring indices:
1. Online information
  2. Electronic services
  3. Privacy and security
  4. Disability access
  5. Foreign language access
  6. User fees and premium fees
  7. Public outreach.
- C. Accenture develops a set of E-governance readiness indices and these are:
1. Citizen-centered interactions
  2. Cross-government service interactions
  3. Multi-channel service delivery
  4. Proactive communication and education
  5. Citizen voice scores.

Layne and Lee (2001), a practitioner of institutions e.g. United Nations, 2008 & European Union, 2009 developed a model that is used to benchmark the progress of e-services, which is in other words, known as “EU model”. In this model 20 common services are considered for comparison where 12 services are directly citizen-oriented and the rest 8 services are business oriented. On the other hand, UN has developed a composite index of web measure index, telecommunication infrastructure index, human capital index, and uses five stages viz. “Emerging”, “Enhanced”, “Interactive”, “Transactional” and “Connected”. The UN model focuses on only citizen-oriented e-services while the EU model focuses on e-services for both citizens and business. Not only has that EU model reflected how businesses and citizens can interact with public authorities (Capgemini, 2009). The present study focuses on only E-

governance readiness in terms of public e-services. So, the UN model is considered as the best choice for this study.

## **2.6 E-Government: Benefits, Citizens, Businesses, And Government Organizations**

This section provides the information about Electronic Government in general. I have tried to discuss some general issues that the readers of this dissertation should be aware of to be able to understand the purpose and goals of the dissertation, before I answer the research questions. Therefore, having a set of reliable background information about e-Government in this section is very critical to the readers. Hence, by studying this section the readers are able to understand and have basic knowledge about e-Government in General. In the following section, I am defining the main terms of the dissertation which are the definition to “State”, “Government”, “E-Government”, “E-Administration”, “Eservices”, “E-Democracy”, and “E-Payment”.

## **2.7 The Definitions of the Main Terms**

Government is a system that helps people live and work together in harmony whether in a local community or as a nation. Government is an organization that has the power to enforce laws, policies, and regulations within civil, corporate, academic, or other organizations in a given country. When we talk about government, we usually mean everything connected with running and controlling a country, including its population; territories, states, agencies, laws, policies, and authorities.<sup>23</sup>

Definition to e-Government may slightly differ from different perspectives. However, all definitions contain the same point and idea. In this dissertation, e-Government is neither a simple tool to provide better services in a better way by Public Administration (PA) to citizens nor a simple question of down-sizing the administration (the back office) and up-sizing services (the front-office) – i.e. a rebalancing from administration to services on a planned and sensible basis. Actually, it is an intersection of such multidisciplinary areas as organization theory, social science, informatics, computer science, public administration, business administration, economy, political science, law, government professionals, library science and so forth which

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<sup>23</sup> Everett, L., (2004). What is Government. Australia: Pearson Education. Available at: [http://books.google.com/books?id=cd92AAAACAAJ&dq=what+is+government&hl=en&ei=q16kTMTtAZKTjAfl-N22DA&sa=X&oi=book\\_result&ct=result&resnum=2&ved=0CCkQ6AEwAQ](http://books.google.com/books?id=cd92AAAACAAJ&dq=what+is+government&hl=en&ei=q16kTMTtAZKTjAfl-N22DA&sa=X&oi=book_result&ct=result&resnum=2&ved=0CCkQ6AEwAQ). [Accessed on Sep 7, 2010]

actually tries to make the interaction and communication with citizens more effectively and efficiently.<sup>24</sup>

Therefore, e-Government is delivering existing government services through cheaper ICT-based channels of distribution or by complementing existing services with added e-features.<sup>25</sup>

In other words, the mean of e-Government which stands for “Electronic Government” is: The delivery of government services through web-based Internet applications to

- 6 Enhance the better and more efficient access to and delivery of Government information and services to citizen, government agencies, and other government organizations
- 7 Provide a greater government service quality to the citizen
- 8 Transform government operations and improve effectiveness, efficiency, and service delivery

However, there are other existing definitions to the term e-government which I prefer to include here for further understanding. Some simply define it as digital governmental information or a way of engaging in digital transactions with customers. For others, e-government simply consists of the creation of a web site where information about political and governmental issues is presented. These narrow ways of defining and conceptualizing E-government restrict the range of opportunities it offers.<sup>26</sup>

### **2.7.1 E-Administration**

E-Administration is about politicians and employees and how different business systems and agencies can be integrated and combine in order to facilitate and to render activities more effective and easy to approach. However, for a good e-Administration to be implemented, skilled human resources are required.

Therefore, the citizen is considered as a “consumer of rights”, claiming what they want from their government which is “personalized and efficient public services”. It corresponds to a government “for the people” with a strategy of citizen satisfaction improvement. E-Services or

<sup>24</sup>Arslan, A.(2007) “Turkish Local e-Governments: a Longitudinal Study” The Electronic Journal of e-Government Vol. 5, No. 2, pp 95 - 106, available online at [www.ejeg.com](http://www.ejeg.com)

<sup>25</sup>Centeno C, van Bavel R and Burgelman JC (2005) “A prospective View of e-Government in the European Union” The Electronic Journal of e-Government Vol. 3, No. 2, pp 59-66, available online at [www.ejeg.com](http://www.ejeg.com)

<sup>26</sup>Sharifi, H., Zarei, B., (2004). An Adaptive approach for implementing e-government in Iran, MSc .Thesis, The University of Liverpool Management School, Chatam Building, Liverpool L69 7ZH, UK, Sharif University Graduate School of Management, Sharif University of Technology, .Sohrevarod Boulevard, Tehran, Iran.

electronic services, give citizen to always be at the core of the governments purposes and functions. Main concern of citizens is to be able to make use of government services as quickly and efficient as possible. Therefore, e-Services focuses on citizens, and businesses and its aim is to make interaction with citizen, businesses, government agencies, offices, employees, and other governments more effective, convenient, user friendly, fast, reliable, inexpensive, and transparent.<sup>27</sup>

### **2.7.2 E-Services**

E-Services for citizen particularly means that any citizen can make or initiate a request for government services and then can receive those services, and information through internet or electronic channels that can best provide the service to the particular citizen. However, for this to be achieved, different factors such as an efficient e-Service management system, public organizations, private sectors, and civil society is required to improve the services, and to motivate effectiveness and therefore, providing better services to citizen and businesses.

### **2.7.3 E-Democracy**

E-Democracy or electronic democracy refers to the use of Information Technology (IT) and ICT in political processes and decision making. “Thin, or representative, democracy means the citizens’ role is as a voter and the representative, once elected, is given an open mandate for decision-making”. The aim of e-Democracy is to make more citizen participation in political decisions which are made by political factors such as government authorities, elected officials, media, political organizations, public sectors, and voters who are the citizens. This active participation can be done by the use of internet, mobile communication (sending text messages to participate and giving idea in decision making), mass media, and any other electronic technologies and channels that offer the services. Through e-Democracy, citizens or any inhabitant can easily make contact and connection with their political actors to exchange ideas even after the office hours. The primary drivers for e-democracy initiatives globally have been both the prospect of taking advantage of the opportunities provided by technical developments in ICT and the perceived need to raise the level of citizen participation in the democratic

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<sup>27</sup> Sarpoulaki .M., Eslami Rad .A., Saleknia .A., (2008). E-Government concept and spatial information: A case study in Islamic republic of Iran. The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, [e-journal] XXXVII /B4, 19-23 .[Accessed Sep 6, 2010]

process, particularly as evidenced by factors such as declining voter turnout at elections in many democratic countries.<sup>28</sup>

### **2.7.4 E-Payment**

E-Payment or electronic payment refers to the online payment. Traditional transactions are characterized with the face to face trading. This is when money and the goods or the product is being exchange at the same time when both buyer and the seller are face to face. However, in the e-Payment, this is not the situation when the buyer and seller are from different locations. “Compared with traditional payment schemes, electronic payment scheme is relatively advantageous, such as in convenience and speediness”. Therefore, e-Payment has become one of the most crucial and critical issued for businesses and financial services. A number of e-Payment systems have recently emerged on the internet to support the users’ needs and request. However, the issues of privacy and security are the other very important and essential characteristics of these services and systems which strongly need to be under investigation and concentration of the authorities.<sup>29</sup>

## **2.8 Perspectives of E-Government**

E-government initiatives can be divided into the following perspectives:

1. E-Business perspective
2. Citizen perspective
3. Knowledge perspective
4. Process perspective and
5. Telecooperation perspective.

### **2.8.1 E-Business Perspective**

The E-Business perspective basically takes the definition of e-government to becoming E-Commerce within the government framework. Deployment of information and communication technologies to improve and enhance the performance of the government.

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<sup>28</sup> Backhouse, J. (2007) “e-Democracy in Australia: the Challenge of Evolving a Successful Model” The Electronic Journal of e-Government Vol. 5, No. 2, pp 107-116, available online at [www.ejeg.com](http://www.ejeg.com)

<sup>29</sup> Kim, C., Tao, W., Shin, N., Kim, K., (2010). An empirical study of customers’ perceptions of security and trust in e-Payment systems. Journal of Electronic Commerce Research and Applications. Vol. 9, No. 1, pp 84-95.



### **2.8.2 Citizen Perspective**

The citizen perspective refers to the end user (customer) concerns and expectations. The perspective encompasses the delivery mode in accessing electronic services.<sup>30</sup>

### **2.8.3 Knowledge Perspective**

The Knowledge perspective recognizes workers' knowledge and their impact when redesigning the transactions to the e-government. This provides for the continuation of the knowledge that was accumulated over the time.

### **2.8.4 Process Perspective**

The process perspective is about the utilization of IT to enhance the service delivery efficiency. In this path, redesigning of organizations and their processes is necessary, which can be aided by systems such as workflow management systems (WFMS). In this perspective, the government's processes need to be coordinated, and their interrelationships should be managed. The process coordination is basically achieved through collaboration, which is related to the cooperation perspective.

### **2.8.5 Telecooperation Perspective**

The telecooperation is about the interaction of the various agencies and trading partners involved in a work process. Therefore, an effective communication and interaction between different government agencies is providing an effective means to exploring the initial stage of e-government development. In particular, in the initial stage of any e-government project, having a telecooperation perspective would be useful as it provides a holistic view, focusing on the support of computer-mediated cooperation in a comprehensive sense.<sup>31</sup>

## **2.9 Requirements for E-Government**

Implementation of e-government features shall require a lot of efforts in a systematic way and perfect plan. However, all of these requirements cannot be mentioned in this dissertation, but these plans must aim to defined target which could be considered as follows:

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<sup>30</sup>Ndou, V., M., (2004). E-government for developing countries: opportunities and challenges, *The Electronic Journal on Information Systems in Developing Countries*, Vol. 18, No. 1, pp 1-24.

<sup>31</sup>Sharifi, H., Zarei, B., (2004). An Adaptive approach for implementing e-government in Iran, MSc .Thesis, The University of Liverpool Management School, Chatam Building, Liverpool L69 7ZH, UK, Sharif University Graduate School of Management, Sharif University of Technology, .Sohrevarod Boulevard, Tehran, Iran.

1. Using communication networks as correspondence highway between main government structure and lower levels of government agencies and customers of governmental services.
2. Replacing current methods and processes with simple and efficient ones.
3. Increasing the efficiency and effectiveness of government agencies in management level by flattening their management pyramid.
4. Improving responsibility against customers and interacting with them in order to provide better services.
5. Cutting administrative expenses and complexity of work processes in governmental organizations by joining up the parallel systems and eliminating redundancy among them.

Though, for all the mentioned aims to be visible, tangible, and effective, reliable and efficient government electronic processes and skilled human resources are required.<sup>32</sup>

## **2.10 General Benefits and Goals of E-Government**

There are different benefits to e-government. E-Government can serve a variety of different objectives. Hence, major benefits of e-government are presented in the following:

- 1 Faster delivery of services to citizens
- 2 Generally improved service delivery and quality
- 3 Reduced customers or citizen costs
- 4 More accurate and convenient delivery of services to citizens that leads to citizen comfort in using services
- 5 Ability to cope with more enquiries in a shorter period of time
- 6 Less duplication between departments
- 7 More customized approach to service delivery
- 8 More accurate records of citizen and government agencies
- 9 Fewer errors such as errors made by employees when dealing with citizen information and request as a paper format
- 10 Improved image for government service and better and more equal relationship with the citizen
- 11 Improves citizen and government agencies satisfaction

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<sup>32</sup> Ahmadi, A., Ghazanfari, M., Aliahmadi, A., Mohebi, A., (1999). Strategic Planning for Implementing E-Government in Iran: Formulating the Strategies. Available at: <ftp://ftp.eng.shirazu.ac.ir/Documents/Proceeding/paper/P06147.pdf> . [Accessed Sep 2, 2010]

- 12 Decreasing costs and administrative size of the government
- 13 Smooth flow of information among citizen, private sectors and government agencies
- 14 More efficiency in organizational process
- 15 Interoperability between service providers and the customers
- 16 Shorter distance between government and citizen
- 17 Creating a better and more user-friendly business environment.<sup>33</sup>

E-government, if implemented properly, brings efficiency gains, which mean governance that is cheaper, does more and is quicker, as well as effectiveness gains, that is governance that works better and is innovative. Hence, the main goals of e-government are presented in the following:

- 1 Offering effective delivery of public goods and services to citizens via quick response government
- 2 Building up good governance mainly promoting a transparent and accountable government
- 3 Expansion of public involvement
- 4 Improving the productivity and efficiency to cut red tape and minimize the expenses
- 5 Promote priority economic sectors

E-government major benefits were mentioned in the table above. However, e-government benefits to citizens, businesses, and public sectors in different ways. In section below, we will look at these benefits.

## **2.11 Benefits: Citizens, Businesses, and Public Sectors**

Developments in technology and the rapid fall in the price of communications and computing have transformed many peoples' lives. New services have been established, and existing ones are provided in new ways with new features. At their best, these services deliver the benefits of:

- 1 Better access, with services available where and when there is a demand
- 2 Delivery through a range of media, over the counter, via call center and online
- 3 Segmentation of the market, with services tailored to suit the needs of groups within the market

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<sup>33</sup> Ghasemzadeh, F., (2001). Safari, H., "Transition to E-Government: A plan for Iran", Management Knowledge, Vol. 55, pp 252-278.

- 4 Responsiveness to feedback about the content and quality of services
- 5 Grouping of services around life episodes or common events
- 6 Comprehensive analysis of data about patterns of usage
- 7 Involvement of users in service redesign and improvement.<sup>34</sup>

E-government with the help of e-Business as a new technology has transformed the way businesses can operate inside country and across border. All these decisions and actions are made to ensure that a specific country become the best place in the world to do and benefit from doing business online. However, there is a clear competition can be seen between countries specially developing countries in terms of their country performances and policies to be one of the best in the whole world in terms of global business processes and citizens satisfaction.

Perfect working e-government methods and processes offer potential benefits for the internal business of government too. Profitable business transactions within country or outside will increase the country's potential in term of globalization. These include gains in efficiency and effectiveness from better use and management of information, whether in support of policy making or the administration of programs. Intranet technologies offer the possibility of establishing knowledge bases and cross departmental working. Extranet connections between organizations, for example between departments, the Non-Departmental Public Bodies (NDPBs) which they sponsor and deliverers of services to users, will enable business to be carried out more quickly and cheaply.

Therefore, if e-government is properly planned, designed, and implemented, it can perfectly benefit to citizens, businesses, suppliers, and public sectors in terms of the service availability, accessibility, quality, and fast delivery. So, e-government services can then improve and enhance the daily operations of the businesses, suppliers, and other public sectors, while citizens can advantage from these services in order to apply their government needs to these services and receive a fast, qualified, and reliable government services. Thus, the table below is showing the benefits of e-government to citizens, businesses, suppliers, and other public sectors.<sup>35</sup>

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<sup>34</sup> Lan, R., (2000). A strategic Framework for Public Services in the Information Age. Available at: [http://archive.cabinetoffice.gov.uk/e-envoy/resources-pdfs/\\$file/Strategy.pdf](http://archive.cabinetoffice.gov.uk/e-envoy/resources-pdfs/$file/Strategy.pdf) [Accessed on Sep 10, 2010]

<sup>35</sup> Fallahi, M., (2007). The obstacles and guidelines of establishing E-government in Iran, MSc. Thesis, Luleå University of Technology, Sweden, available online at: <http://epubl.ltu.se/1653-0187/2007/052/LTU-PB-EX -07052-SE.pdf>

**Table (2.1) Benefits of E-Government to Citizens, Businesses, Suppliers,  
and Other Public Sectors**

<b>Public sector Transaction with</b>	<b>Example</b>	<b>Benefits</b>
Citizen	Information, Culture, Health, Education, Taxation and transactions	Wider choice of channels, convenient, short time and lower transaction costs, better access and service availability, more personal services, greater awareness of services and policies, larger democratic participations, security, feedbacks, citizens awareness of the services
Business	Support programs, advice and guidance, regulation and taxation	Quicker and faster business transactions and operations, technology announcements, decrease in employees efforts, reducing transaction cost and time, clear business regulations and policies, security
Suppliers	e-Procurement	Reduced transaction costs and time, faster transaction, security, better inventory and customer management, shared data through customers and other suppliers
Other public sectors bodies	Better and effective communication between departments and agencies and between local and central government policy making	Greater accuracy and efficiency, reduces transaction costs and time, reduced employees effort, better data and decision sharing, faster response to citizens, better use of knowledge, flexible working arrangement

## 2.12 Dimensions for Strategic Planning of E-Government

Different dimensions for strategic planning of e-government exist. These dimensions or parameters are needed to be well comply for a successful strategic planning of an e-government that will lead to the successful implementation of the e-government. These dimensions or parameters are strategy, finance, legal issues, management, security, technology, human resources, technical infrastructure, information and data, marketing, and culture. Below you can find these dimensions or parameters briefly explained.

To be able to implement e-government successfully, an appropriate strategy is needed to be complied. Therefore, strategy would be a very familiar term for all of government authorities and organizations. Every organization, business, firm, and government should be able to have an appropriate strategy to be able to satisfy their expectations.

This should be remembered that e-government is not a cheap way of providing services to the citizen, hence, intelligent and proper budgeting and finance is the requirements. The financial status of a government should be enough to be capable of implementing e-government. Most striking is that e-government is not implemented in a short-term, so appropriate strategy for budgeting e-government can very well help to a successful implementation.

On the other hand, e-government deals with large amount of citizens and government's data and information. Government legal issues and responsibilities are to support and secure the collection of data and information. While strategic planning of e-government is performed, legal issues of e-government should be under consideration.<sup>36</sup>

Moreover, the management should be supported with the right framework and tools to be able to make decisions. On the other hand, different government agencies and departments from different part of the country should also be related and connected together. All these departments should be following the same standard in designing their databases. Hence, this is the job of the management to provide and set the standard, framework, and any other factors that guarantee the right and secured way of interaction between different agencies and departments.

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<sup>36</sup> Kumar V, Mukerji B, Butt I and Persaud A (2007) "Factors for Successful e-Government Adoption: a Conceptual Framework" The Electronic Journal of e-Government Vol. 5, No, 1, pp 63 -76, available online at [www.ejeg.com](http://www.ejeg.com)

Foremost, security has been always a big issue in every business, firm, and government. Lack of security in e-government is considered as e-government obstacle. E-government should be well designed and implemented so that it can avoid and reject any attacks to the data of citizens and government. In addition, strong technical skills, and qualifications of the leadership are all the critical factors, but owning the technology has another importance. Technology is needed to be used in information systems and also hardware for a successful e-government.

However, behind all successful e-government and its implementation and development; expert, knowledgeable, and skilled staffs are placed. Therefore, people are always at the core of the successful e-government implementation.

Appropriate technical infrastructure is the prerequisite to implement the successful e-government. Hence, without the proper infrastructure, implementation of a successful e-government is not advised.

Moreover, e-government is always dealing with large amount of information and data. Thus, a successful e-government should be able to manage the data. Developing an appropriate data structure, data dictionaries, and data definition are critical to the success of data and information management. In this sense, managers can attempt to minimize the data related problems with sharing standards, definition with the government agencies. Aside from that, feedbacks from users can make a big role in management of data and information.<sup>37</sup>

On the other hand, marketing refers to the marketing of government services which are offered to the citizens through web. This can help to develop the services given to the citizens; improve and encourage service users to more engage with the online marketing of the government services; provides opportunities to the less developed countries to develop their own marketing of government services; reduces organizational costs and effort; provide the better channel of communication between the government and citizens; provide the better way for government announcements on new services; provide the citizens the opportunity to see different services and compare them to find what service is fit to their needs.

Therefore, to benefit and advantage from all the mentioned parameters, people should have the tendency and will to use the government services through government web pages. Hence,

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<sup>37</sup> Kumar V, Mukerji B, Butt I and Persaud A (2007) "Factors for Successful e-Government Adoption: a Conceptual Framework" The Electronic Journal of e-Government Vol. 5, No, 1, pp 63 -76, available online at [www.ejeg.com](http://www.ejeg.com)

culture presents the way staff, and citizens think about implementing, developing, and use of e-government. Staffs spend many years working with traditional systems and paper based jobs. Citizens used to do the government tasks such as tax payments through bank counters. Hence, changing their culture and attitude toward being completely technology and web based is one of the main parameter of the strategic planning for implementing a successful e-government.<sup>38</sup>

Through my comprehensive literature studies, these parameters are the most important mentioned factors that should be under consideration when strategic planning for implementing e-government is being under study.

### **2.13 Citizen Focused Government**

When citizens are interacting with government in order to use the government services, they are expected to receive the high quality accessible services which are provided in its much secured way. Citizens do not need to know how the government is organized and how the e-government is implemented. What they need to know is what the services are offered to them and how they can make use of these services. They want to be updated about a new service which is being launched and what the service can offer them as a citizen.

### **2.14 Accessible Services**

It is not enough that government authorities implement e-government and different e-government services in order to serve citizens, businesses, and government organizations. But the appropriateness of the different communication channels in which citizens' awareness regarding different services can increase and also giving the citizens the idea on how they can have an access to these services is very essential and critical. During the strategic planning for e-government, it should be proposed that the services should be accessible over the internet, through mobile phones, TV, radios, and call centers. However, services should be tailored to the individuals' needs.

New ways of doing business will change the relationship between individuals and government. Access to information will be firmly established under the Freedom of Information legislation and government organizations will be more responsive to citizens' views. At the same time, it

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<sup>38</sup> Abdollahi, A. Fasanghary, M. Azadnia, M., (2009) A Foresight based Framework for E-government Strategic Planning, Journal of Software Vol .4, No .6, pp 544-46.



will be vital to make sure that people can trust the systems we use, by ensuring that their personal data is protected and those systems are secured.

## **2.15 Inclusiveness**

Aside from accessibility of the services, services should be designed and develop in a way that they are available to every citizen and also easy to use and easy to be operated. As has been mentioned in section 2.4, different communication channels such as TV, radios, and mobile phones are the primary communication channels between government and citizens. These communication channels will become increasingly important as a means of accessing citizens on how to use government services through internet. Telephone and call centers still remain as the preferred means of contact for many citizens. Therefore, call centers should improve their functionalities by giving their staff more access to information networks for them to be able to provide citizens with more accurate and efficient services. Aside from that, staff should be very well trained to have excellent communication skills and social behavior.

Online public services must be well designed and accessible to all. This includes providing services for minority language groups and those with disability or limited mobility.<sup>39</sup>

## **2.16 Managing Information and Managing Changes**

The significance of the large amount of government information is not unfamiliar to anyone. Citizens and government's information are valuable resources. The value of these resources is not unknown from anyone. From a normal citizen to an expert staff in the government parliament, they all are aware of the importance of this information. At the heart of this, is the way this information is used by the government agencies and public sectors.<sup>40</sup>

Implementing the strategy requires organizations to adopt coherent and compatible information policies in support of better policy making, better service delivery and more efficient working.

However, changes always exist. Government agencies, public and private sectors, and businesses should work in partnership to be able to support the e-government total

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<sup>39</sup> Lan, R., (2000) A strategic Framework for Public Services in the Information Age. Available at: [http://archive.cabinetoffice.gov.uk/e-envoy/resources-pdfs/\\$file/Strategy.pdf](http://archive.cabinetoffice.gov.uk/e-envoy/resources-pdfs/$file/Strategy.pdf) [Accessed on Sep 10, 2010]

<sup>40</sup> Ghasemzadeh, F., (2001) Safari, H., "Transition to E-Government: A plan for Iran", Management Knowledge, Vol. 55, pp 252-278.

performances, information security, information management, as well as change management.<sup>41</sup>

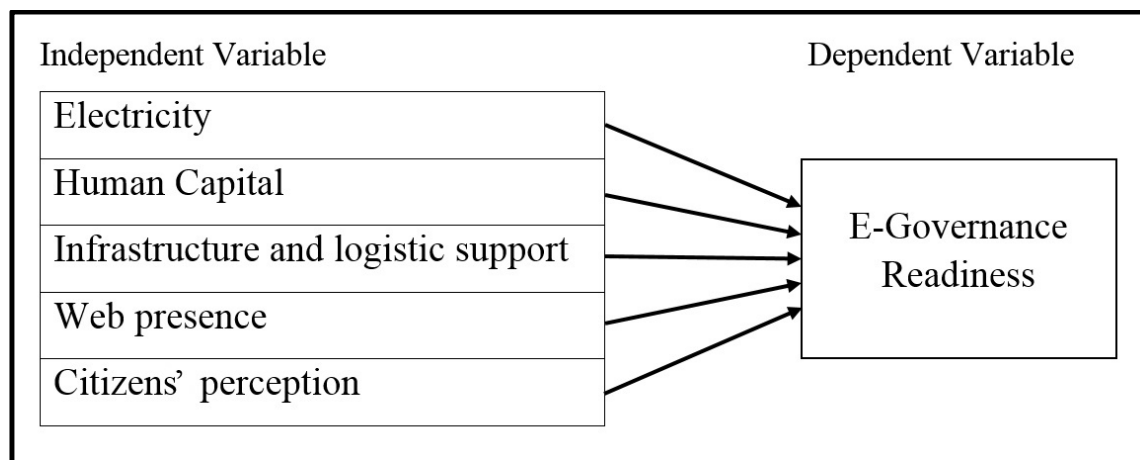
## 2.17 Analytical Framework

On the basis of the above concepts and issues related to E-governance, an attempt is made to develop an analytical framework for this study. In developing the analytical framework, the relevant concepts are considered in line with the literature review and tried to relate these concepts with this research work.

The over view of the concept of E-governance provides a solid foundation of the theoretical concepts. In accordance with the “UN model” and various E-governance Measuring Indices provided by UN-DESA, the only dependent variable is E-governance readiness. And the assumed independent variables are human capital, infrastructure and logistic support, Web presence, perception of the citizens that may have influential effects on the dependent variable E-governance readiness.

Therefore, the effects of independent variables on E-governance readiness, the dependent variable, in the context of Public Administration of Myanmar are verified herewith as these all variables are derived from the given sets of E-Readiness measuring indices and relevant concepts. An analytical framework for the purpose of this research has been developed in the following way.

**Figure (2.4) Analytical Framework**



<sup>41</sup> Fallahi, M., (2007). The obstacles and guidelines of establishing E-government in Iran, MSc. Thesis, Luleå University of Technology, Sweden, available online at: <http://epubl.ltu.se/1653-0187/2007/052/LTU-PB-EX -07052-SE.pdf>

**Table (2.2) Measurable Indicators for Independent Variables**

No	Independent Variables	Indicators	Source of Data*	Category
	Electricity	<ul style="list-style-type: none"> <li>Overall Power (Electricity) Situation at Workplace</li> </ul>	Q	Supply Side
2	Human Capital	<ul style="list-style-type: none"> <li>Competency</li> <li>Accessibility to ICTs</li> <li>Usability               <ul style="list-style-type: none"> <li>Personal email</li> <li>Official email</li> </ul> </li> </ul>	Q Q Q Q Q	
3	Infrastructure and Logistic Support	<ul style="list-style-type: none"> <li>Computer accessories at workplace</li> <li>Internet connection at workplace</li> <li>Internet connectivity speed at workplace</li> </ul>	Q Q Q Q	
4	Web Presence	<ul style="list-style-type: none"> <li>Availability of e-Service</li> <li>Affordability of e-Service</li> </ul>	Q Q	
5	Perception	<ul style="list-style-type: none"> <li>Citizens' perception about ICTs</li> <li>Accessibility to ICTs               <ul style="list-style-type: none"> <li>Ownership of computer</li> <li>Shared access</li> <li>Others (Cyber Café)</li> </ul> </li> </ul>	Q & I Q & I Q & I Q & I Q & I	

**\*Indicators for the Independent Variables (Q=Question, I=Interview)**

## Chapter - 3

### *An Overview of E-Government in Myanmar*

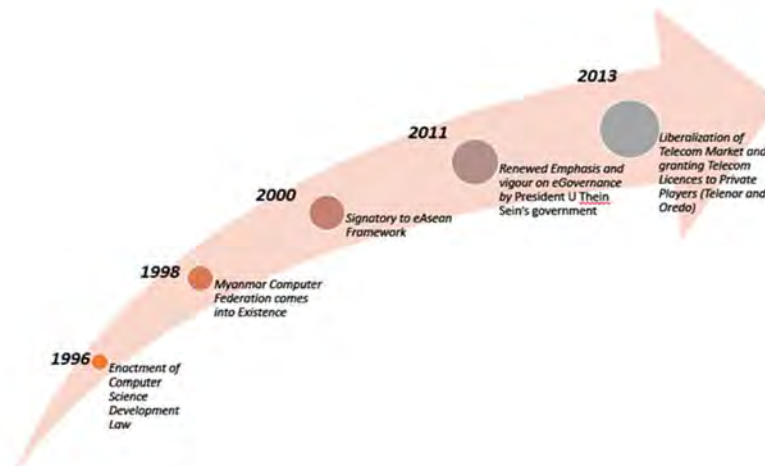
#### *Myanmar Current State Assessment*

While globally there has been widespread adoption of Information Technology primarily post, World War II, Myanmar has also been gradually adopting ICT since 1981. The emphasis on ICT Sector has its roots in the enactment of Computer Science Development Law in 1996, and the formations of Myanmar Computer Development Council (MCDC) and Myanmar Computer Federation (MCF) in 1998.

MCDC is tasked with laying down policies and regulatory guidelines to accelerate the adoption of ICT in governance process. MCF is the official federation – an umbrella organization of all official computer-related associations. It works closely with Computer Science Development Council (CSDC) and serve on advisory committees, technical committees and working groups for various national bodies and government departments.

Some of the key milestones of ICT adoption since 1996 are below.

**Figure (3.1) Growth of ICT Sector in Myanmar 1996 to Date**



**Source: Myanmar e-Governance ICT Master Plan (2015)**

### **3.1 Assessment of E-Government Organization and Capacity**

Key identified pain points of today's e-government organization and capacity in Myanmar are as below:

#### **3.1.1 E-Government Department is Not High-Enough in Organizational Hierarchy**

While the MCIT (Ministry of Communication and Information Technology) has a department for e-government within the MPT (Myanmar Posts and Telecommunications), (which in turn is a department under the MCIT), Myanmar's e-government activities are largely driven by individual Ministries with limited sharing of infrastructure, resources, applications and talent between each other, and with the MCIT.

#### **3.1.2 Inadequate Staff in E-Government Department**

The MCIT supports individual ministries with limited set of resources, who in turn manage the shared applications (EDMS and GPMS) as well the infrastructure required at the Data Centers in Yangon and Nay Pyi Taw for the individual ministries' applications. Additionally, a handful (3-5) of officers and staff of the MCIT in Nay Pyi Taw, assist in various e-government activities on a part-time basis.

#### **3.1.3 Ministries Have Limited Skilled IT Staff**

Individual Ministries have a small number of staff, usually working on handling ICT functions on a part-time basis, in addition to their regular operational responsibilities.

#### **3.1.4 Lack of Clearly Defined Roles and Responsibilities**

While almost all ministries also have a designated Chief Information Officer (CIO), in almost all cases it is an ad-hoc additional responsibility with no clear job definition. At times, the person so designated is also in lower level of comparative hierarchy, with limited leverage with other members. Also as the CIO job is often the secondary responsibility, it receives limited focus.

#### **3.1.5 Staff Require Further IT and Project Management Training and Exposure**

Majority of the people involved in ICT activities lack formal training in ICT related activities and have learned on the job. Skill areas such as process reengineering, policy formulation,

project management, architecture, design, quality assurance, organizational change management, portfolio management are either largely absent and/ or rudimentary in nature for most ministries.

As a result, application development and rollout efforts are mostly undertaken without a comprehensive change programme that spans government process reengineering, robust and scalable service-oriented architectures, user-centric design, security and standards adoption, communications and organizational change management.

### **3.1.6 Limited Empowerment and Lack Clear Definition of Responsibilities**

The absence of an empowered and adequately staffed organization that can drive the national e-government agenda has resulted in limited replication of e-government effort and slow pace of implementation and change.

Another area of concern is that the e-government unit does not have any direct authority from the Office of the President, and thus exercises limited influence or control over the overall implementation.

As a result, individual ministries are largely proceeding with project selection with limited or no inter-ministerial coordination. This has resulted in infrastructure such as data centers being planned and implemented in an uncoordinated and non-standard manner, potentially resulting in lower volume bargaining power, suboptimal return on investment, heterogeneity in technology landscape, increased complexity of operation, increased difficulty in finding required skills, and reduced interoperability and integration.

### **3.1.7 Funding Agencies Frequently Drive Strategy and Implementation in Siloes**

The above situation accentuated by the development grants/ loans from multilateral and bilateral agencies, who mostly work independently, and usually believe in building end to end capacity and capability to avoid constraints. This at times results in duplication, repetition or redundancies.

In some cases, Individual ministries' product and technology selection, as well infrastructure architectures are largely driven by the Funding agency. This has often resulted in the deployment of systems that are not fit for purpose or are cumbersome to use. (E.g. EDMS).

This is primarily because of absence of adequate requirements gathering and design process, and implementation and change management process at end-user ministries. This also suffers from the absence of a coordinated effort by a central organization capable of (and empowered to) handle a large technology-led transformation programme.

In summary, the current structure and process has a large number of issues and lack of clarity in terms of budget allocation and control, capability needs, and lack of alignment to the core goal of delivering efficient e-government.

### 3.2 High Level Assessment of Myanmar's Current ICT Skills

In order to implement a large e-governance programme, available and access to ICT skills of adequate quality and in adequate quantity is key. To create a large pool of people skilled in implementing ICT systems, a foundation of large numbers of graduates with basic degrees is extremely important.

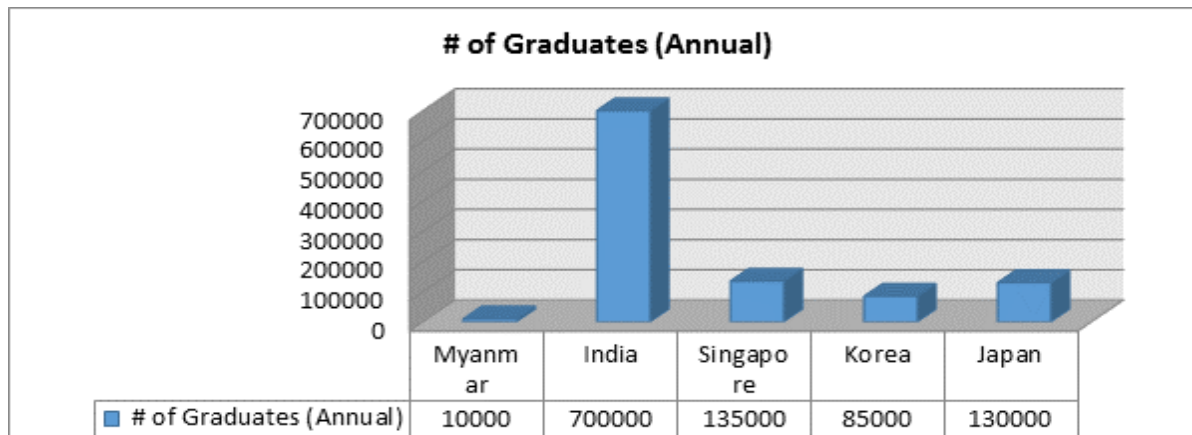
The table below provides statistics on colleges and students graduating annually in Myanmar:

**Table (3.1) Students Graduating (Annually) in Myanmar**

Ministry of Science and Technology	Number of Computer Universities/Colleges	25
	Number of ICT Graduates/Year (Under/Post-grad: Diploma, Bachelors, Masters, Doctorate)	6000+
Ministry of Education	Number of ICT Professionals Per Year (Under/Post-grad: Diploma, Bachelors, Masters)	1500
Myanmar Computer Federation	Number of ICT Professionals Per Year (JITEE/MCPA Certification)	700
	Number of ICT Professionals Per Year	850

**Source: Myanmar e-Governance ICT Master Plan (2015)**

This may be compared with the number of graduates produced annually by other countries, as shown in the figure below:

**Figure (3.2) Number of Annual Graduates Other Countries**

**Source: Myanmar e-Governance ICT Master Plan (2015)**

Local IT companies and organizations could undertake some of the task of providing critical skills required for e-government in Myanmar. Around 700 ICT companies were registered with MCF in 2013. These companies could help initiating and integrating with the national skill development exercise in areas like:

1. Job enablement programs
2. Centre of excellence and
3. Research and development

**Table (3.2) ICT Companies in Myanmar**

Region / State	Companies
Yangon Region	459
Mandalay Region	82
Sagaing Region	37
Shan State	26
Ayeyarwady Region	16
Mon State	46
Bago Region	31
Magway Region	11
TOTAL	708

**Source: Myanmar e-Governance ICT Master Plan (2015)**



### 3.3 High-level Assessment of ICT and E-Government Policies

Policies form the backbone for any e-government programme for conceptualization, development and deployment. It plays the following roles:

1. Gives clarity to overall construct – the scope, the entry and exit criteria, stakeholder definition/ rights/ responsibilities
2. It provides a level playing field for all the participants, with complete clarity of the rules of the games
3. Policies provides unique opportunity to translate global benchmarking and best practices to the local context

The key characteristics of policymaking are:

1. Clarity of purpose, method and execution
2. Definition of the participants and stakeholders, with their roles/ responsibilities/ rights
3. Clarity on redress – circumstances and procedure
4. Leverages the global knowledge, but tweaked to the local socio-economic-political realities

### 3.4 Current State of E-Communication in Myanmar

The following are among the different licenses being regulated by Post and Telegraph Department:

1. WAN License (Establishment and Service)
2. Service license
3. Station license
4. Satellite phone/ VSAT license
5. Mobile license 6. Microwave license
6. WLL license
7. Long-range and short-range cordless phone license
8. Point to point license
9. Telecom equipment repair license
10. Telecom equipment dealer license
11. Certificating Authority (CA) License
12. Public Access Centre (PAC) License

13. Currently the following laws and notifications have been issued to regulate telecommunications and ICT sectors:
14. Myanmar Telegraphy Act
15. Myanmar Wireless Telegraphy Act
16. Electronic transaction Law
17. Computer Development Law
18. Notification on Wide Area Network Establishment and provision of services

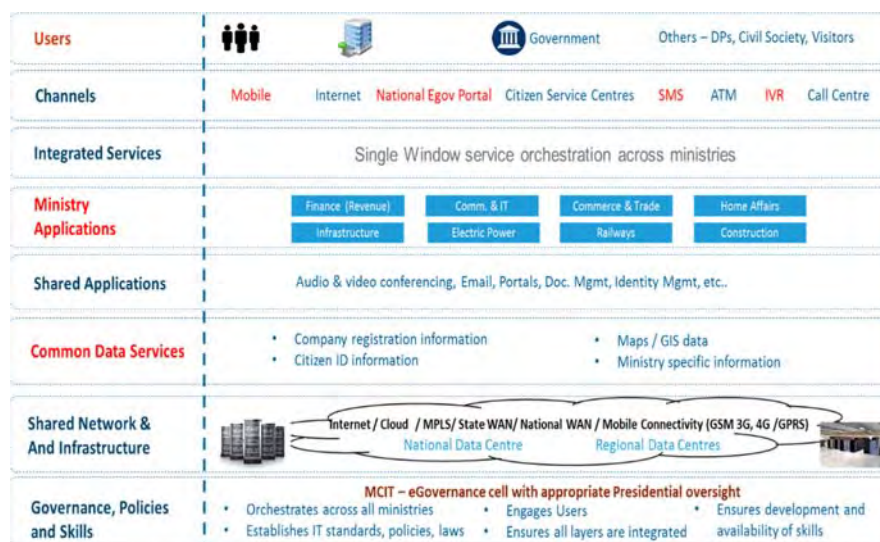
As Myanmar gets into the phase where e-government is a critical component of its growth and prosperity, there is an urgent need to re-evaluate the current policy framework, and define a roadmap to reach a comprehensive but facilitating policy regime, that also defines policies applicable to Information Technology and its use, and not just telecom, networks or hardware.

### 3.5 Proposed Target E-Governance State

#### 3.5.1 Conceptual Architecture for E-Governance

The e-governance Roadmap for Myanmar has been developed with the architectural framework shown in the figure below as the basis. This framework depicts a layered approach with the goals of maximising reuse and minimising duplication, while ensuring integrated service delivery. This conceptual architecture also ensures a holistic and inclusive approach.

**Figure (3.3) E-Governance Framework Conceptual Architecture for the Roadmap Development**



**Source: Myanmar e-Governance ICT Master Plan (2015)**

The Architecture and its relevance to e-governance Roadmap is as explained below.

### **3.5.2 Governance, Policies and Skills**

The foundation of the e-governance Roadmap is a robust e-governance organisation, led by the MCIT. This organisation will develop the required standards, policies and laws that facilitate and enable e-governance. This organisation will engage all the stakeholders – government (G2G), business (G2B), and Citizens (G2C). To ensure requisite powers to deliver an effective roadmap, the study recommend that the organisation be provided with Presidential Office sponsorship and oversight – either through law, or through augmented authority through appropriate governance mechanisms.

### **3.5.3 Common Data Services**

Government data is needed by departments other than who own them, to ensure seamless service delivery. For example, citizen identity information, company information and company director information, land record information, Roads and Right of Way information, etc. have use beyond the ministries where they originate - the Home Ministry, Commerce Ministry and Construction Ministry respectively.

Enabling controlled and structured access to such data with open, yet secure, published application programming interfaces (APIs) should begin while capturing the requirements. However, they need to be recognised as “common” data right up front, so that appropriate stakeholders / users may also be consulted to examine what aspects of the data they will use and how. Accordingly, Common Data Initiatives, including the classification of data have been prioritised in the e-governance Roadmap.<sup>42</sup>

### **3.5.4 Shared Network and Infrastructure**

In order to enable efficient use of the large investments expected into infrastructure such as data centres, servers, network equipment, storage, spectrum, etc., such infrastructure needs to be adopt shared-services philosophy. Future needs of availability, extensibility; scalability inter-operability is to be incorporated to cater to a wide variety of common and ministry specific applications.

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<sup>42</sup> Asian Development Bank (ADB), Technical Assistance (8398): MYA: Design of e-Governance Master Plan for the Republic of the Union of Myanmar – Interim Report

### **3.5.5 Shared Applications**

The first set of applications is to enable efficient communications, collaboration, and information dissemination, with low latency and high redundancy. Prioritised applications suggested include: email, internet portals, office and desktop video conferencing, document management, identity and access management, application-to-application integration frameworks, etc. Planning for shared applications proactively will ensure that such applications are widely adopted across the government, unlike past experiences with applications such as EDMS. This in turn, will improve productivity, and lead to increased adoption and advocacy.<sup>43</sup>

### **3.5.6 Ministry Specific Applications**

Based on ministry interactions and prioritisation Framework, the study identified and prioritised various ministry-specific initiatives. The timelines for these initiatives are indicative based on experience in designing, implementing and operating various e-governance projects as well as private sector projects across various ministries / departments globally.

A key assumption in the timelines is the availability of skilled talent in requisite numbers, either locally, or through international partnerships & collaborations.

The study will develop budgetary estimates for the recommended initiatives, However refinement of the same in the context of actual scope & timeline, as well the funding requirements are not covered in the study. This needs to be taken up subsequently as an additional exercise.

### **3.5.7 Integrated Services**

Historically, most governments have adopted a ministry by ministry, service by service model for e-governance. However the study believes that Myanmar can skirt such an arduous journey, and adopt an orchestrated, end-to-end business process view across ministries for implementation. This has been endorsed by all the stakeholders.

Appropriate technologies must also be deployed, such as Portals and Business Process Management engines, Workflow Engines and Enterprise Services Buses for integration and orchestration. An organisation of Business Analysts, with knowledge of the government

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<sup>43</sup> Master Plan for the Republic of the Union of Myanmar e-Governance Roadmap report (2015)

policies, as well as various Business processes across Ministries and Departments must be created in order to ensure that a good integrated end-customer experience. A “Single-window” or “Single-Portal” interface is to be developed for maximise effectiveness.<sup>44</sup>

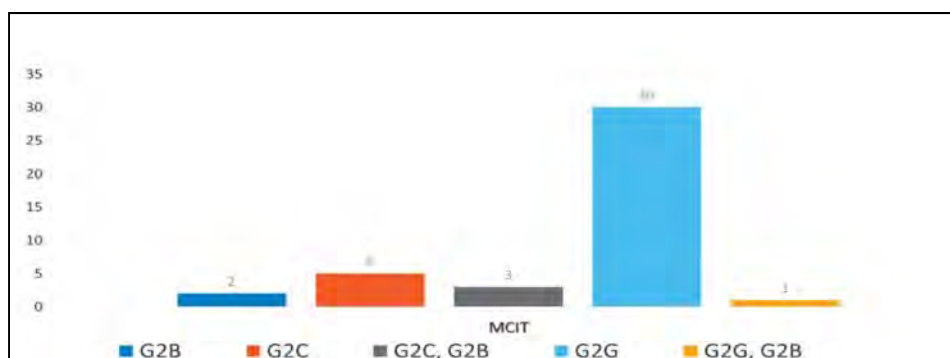
### 3.6 Applications

The key dimensions of an e-government strategy for Myanmar are service enablement, establishment of delivery channels and foundation of key enablers to facilitate implementation of the prioritised applications. This will expedite the creation of a sustainable and accountable ecosystem for e-governance.

The study has identified common as well as ministry specific application initiatives to enable the overall implementation of the e-governance programme.

The figure below represents the categories of the services. As Myanmar is starting from a limited e-governance repository, and looking at leapfrogging into a citizen centric and inclusive e-governance regimen, the first critical requirement is strengthening the inter-governmental services efficiency. This will lay the foundation for quick roll out and adoption of citizen and business centric services, with lower cost, higher efficiencies and effectiveness.

**Figure (3.4) Initiatives Count by Target Segment**



**Source: Myanmar e-Governance ICT Master Plan (2015)**

The report (Technical Assistance 8398: MYA: Design of e-governance Master Plan for the Republic of the Union of Myanmar Interim Report) identifies few G2B and G2C initiatives, due to their inherent dependencies on other infrastructural initiatives, these may be augmented

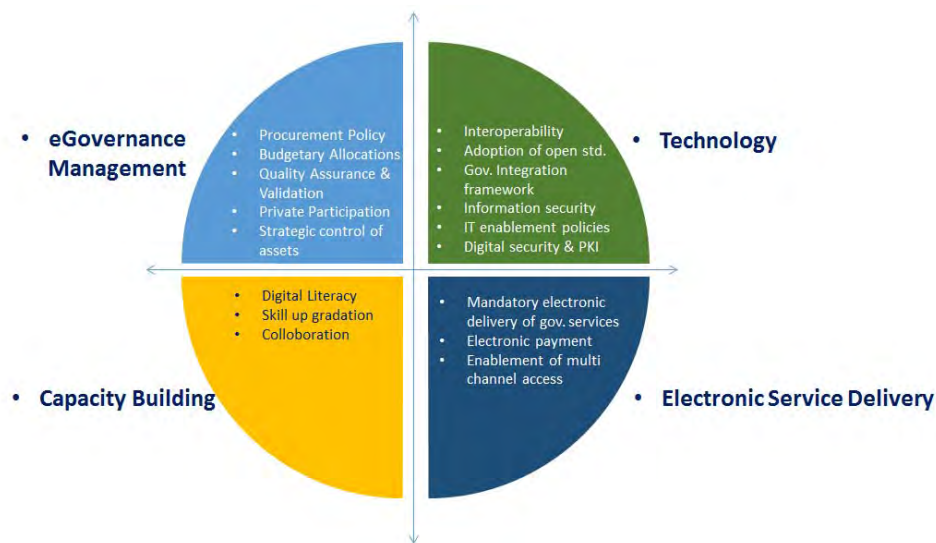
<sup>44</sup> Master Plan for the Republic of the Union of Myanmar e-Governance Roadmap report (2015)

in the final report, based on relevance of the initiatives to the current context and state of the country to other countries across the globe.<sup>45</sup>

### 3.7 IT Policies

The below suggested e-governance Policy Framework is a set of principles and goals intended to govern the development, implementation, adoption, monitoring, evaluation and application of initiatives across the various arms of Myanmar Government. The list of policies indicated below are mandatory ones. As the pace of adoption of e-governance increases, Myanmar Government needs to have an institutional framework to formulate new policies (for an area of ICT Concern) as well as keep the current policies updated, relevant and effective.

**Figure (3.5) Information Technology Policies in Myanmar (Source: Myanmar E-Governance Roadmap Report)**



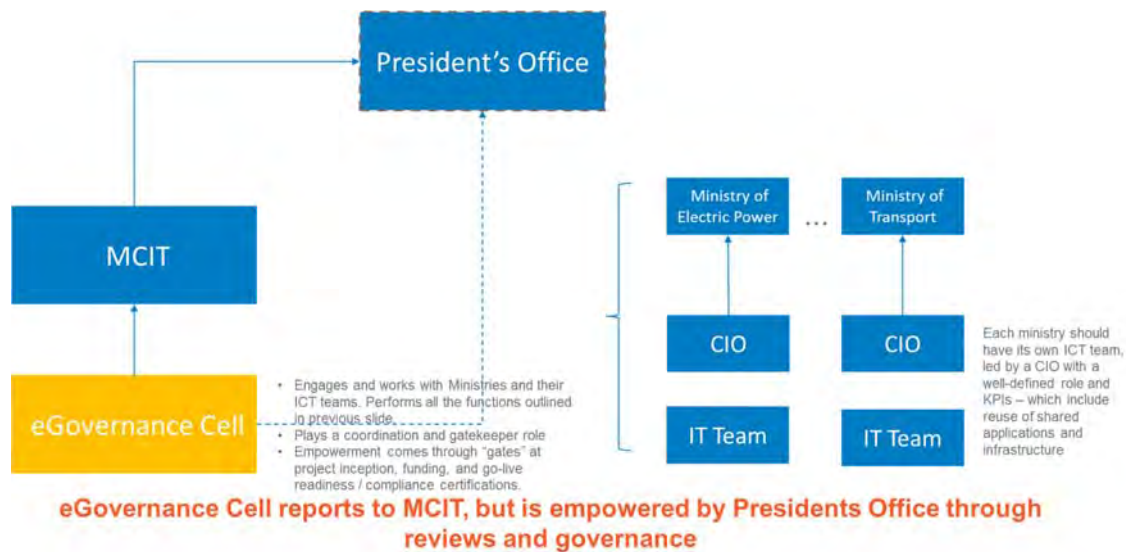
**Source: Myanmar e-Governance ICT Master Plan (2015)**

### 3.8 Enhanced E-Governance Cell Within MCIT

Today, the MCIT already holds the responsibility for being the primary executing agency for the e-governance Master Plan. A small unit within the MCIT performs a very limited set of functions relating to e-governance initiatives (such as maintaining and managing shared ICT infrastructure, and coordinating across ministries as a high-level). The organisational position of the current e-governance cell is depicted in the figure below.

<sup>45</sup> Technical Assistance (8398): MYA: Design of e-Governance Master Plan for the Republic of the Union of Myanmar Interim Report

**Figure (3.6) Enhanced E-Governance Cell Under MCIT**



**Source: Myanmar e-Governance ICT Master Plan (2015)**

### 3.9 Proposed E-Governance Skills Development

Various ICT skills are required to manage the pace and complexity the ambitious e-governance roadmap. Illustrations of the skill sets required are:

1. Strategic IT – IT Strategy, Budgeting, Programme Management, Collaborations, Consensus building
2. Procurement – Hardware, Software, Services, Contracting, Vendor Management
3. Consulting – Strategy, Process, Industry, Technology
4. Policy and legislation development
5. Architecture – Applications and Infrastructure
6. Implementation – Requirements, Design, Coding, Testing, Integration (Technology-specific skills)
7. Quality Assurance – Validation and Acceptance Testing
8. Operations Management – Applications, Infrastructure, Helpdesk, Implementation, Scope and Budget Management

Given the size and complexity of the roadmap, the study expects that large numbers of individuals as well as a higher-level of experience (beyond those available in Myanmar today); will be required for successful implementation of the e-governance roadmap.

### 3.10 Strategies for Skills Development in Myanmar

Given the limited availability of ICT skills Myanmar, a multi-pronged strategy is required to rapidly develop and acquire the myriad skills required. Some of the strategies that the government may adopt are listed below:

1. Building new ICT institutes
2. Increase the capacity of the existing institutes
3. Partner with global IT service providers
4. Government mandate for ICT education at school level
5. Public Private Partnerships (PPPs) for mandatory co-curricular industry apprenticeships
6. Explore non-traditional models for e-governance delivery (e.g., start-up incubators)
7. Ease/clarify 70 day visa rule for import of IT skilled-workers
8. Attracting / reaching out to skilled Myanmar emigrants from developed economies (e.g. Singapore, Korea, USA, etc.) with incentives towards nation building

Each strategy will need to be converted into an action plan in cooperation with multiple ministries. Hence, a dedicated Skills Development organisation is required within the e-governance cell, as has been highlighted in another section of this document<sup>46</sup>.

### 3.11 Industry Support for Skills Required for E-Governance Roadmap Delivery

Today, Myanmar Computer Federation (MCF) is the primary industry body that is actively chartered with “contributing towards the emergence of a modern developed State through ICT”. MCF is the official federation – umbrella organisation of all official computer-related associations, working groups, technical committees in the Republic of the Union of Myanmar. MCF is comprised of over ten thousand IT student and professional members, six hundred corporate members and over a hundred thousand young basic education student members.

MCF works closely with the Myanmar Computer Science Development Council, which is chaired by the Union Minister for Communications and Information Technology. MCF regularly organises awards and assistance (to teacher training colleges) for basic computer education.

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<sup>46</sup> Myanmar e-Governance Roadmap report (2015)



Working with MCF, a significant step-change in skills development is required to build skills in all the dimensions above. MCF is already adopting / planning advantage the Japanese Information Technology Skill Standard (ITSS) career development framework / standards for IT Skill development.

**Figure (3.7) ITSS Skills Development Framework**

ITSS Career Framework

Job categories	Marketing	Sales	Consultant	IT Architect	Project Management	IT Specialist	Application Specialist	Software Development	Customer Service	IT Service Management	Education	
Specialty Fields	Marketing management Sales channel strategy Market communication	Product sales by visiting customers Consulting sales by visiting customers	Sales via media Industry Business function	Application architecture Integration architecture Infrastructure architecture	Systems development IT outsourcing	Software product development Network service Platform	Database Network Common application infrastructure Systems management Security	Business application package Business application system	Basic software Middleware Application software Hardware	Facility management Operations management System operation	Service desk Operation	Instructions Planning training programs
Level 7												
Level 6												
Level 5												
Level 4												
Level 3												
Level 2												
Level 1												

**Source: Myanmar e-Governance ICT Master Plan (2015)**

A structured framework such as the one above, once mapped to the numbers and quantities of skills required for the implementation of the e-governance Roadmap 2015-20, would provide a good estimate of the numbers of skills required for each type of role – across MCIT, individual ministries, as well as the Industry in general. The Final Report will to provide an illustrative profile of skills required across all the ministries, based on the above framework.

### 3.12 Improving ICT Skills in Government

It is expected that many skilled resources across the spectrum of skills indicated above will be required to be recruited – either directly or indirectly – to manage and support the e-governance roadmap for Myanmar. While a more detailed capacity/ skill profile will be articulated in the

Final Report, the MCIT should plan to create a Skill Development and Training cell within the e-governance Cell to perform the following functions:

1. Training department in E-governance cell for training other departments
2. Sustained e-governance education programmes – curricula, schedules, infrastructure, assessment methods, etc.
3. Hiring and recruiting within the Government

### **3.13 Improving Citizen and Business Digital Awareness**

Given the limited penetration of computers and e-governance applications in Myanmar, it would be critical to implement a programme for spreading the awareness of the conveniences and benefits offered by e-governance applications to both Citizens and Businesses, as part of the Change Management and Communications tracks of any programmes being implemented.

Along with the MCF, it is critical to establish large-scale awareness and education programmes, comprising video or Computer-based training based, programmes for e-governance programmes in general.

It is also imperative that each e-governance programme (or Ministry application) be mandated to develop local language, computer-based / video-based training materials for mobile phone-based dissemination.

Additionally, each Ministry-application should also avail of a common e-governance Call Centre (which is also one of the initiatives recommended), to offer on-call support to any novice citizen or business user.

### 3.14 Way Forward

The sample roadmap of all initiatives identified will be detailed in the Final Report (Technical Assistance 8398: MYA: Design of e-governance Master Plan for the Republic of the Union of Myanmar Interim Report) as depicted below:

**Figure (3.8) Sample Roadmap for Initiatives**

In.#	Ministry	Initiative Name	Track/Layer	Y1				Y2				Y3				Y4				Y5			
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	MCIT	Project management system	Common Apps	1	1																		
2	MCIT	E-procurement	Common Apps	1	1																		
3	MCIT	National Data centre	Common Infra	1																			
4	MCIT	Network	Common Infra	1																			
5	MCIT	Cloud	Common Infra	1																			
6	MCIT	Mobile Gateway	Common Infra																				
7	MCIT	E-Office	Common Apps																				
8	MCIT	Government email services	Common Apps																				
9	MCIT	Content creation and management framework	Common Apps																				
10	MCIT	Office Video-Conferencing	Common Apps																				
11	MCIT	Desktop Video Conferencing & Collaboration	Common Apps																				
12	MCIT	Common Citizen Service Portal (National Portal - WB)	Common Apps																				
13	MCIT	Platform for e-Delivery of content (How is this different)	Common Apps																				
14	MCIT	E-payment Gateway	Common Apps																				
15	MCIT	Citizen Service Center	Common Apps																				
16	MCIT	IDAM solution for all government employees	Common Apps																				This will
17	MCIT	Common Payroll	Common Apps																				
18	MCIT	Common HRMS	Common Apps																				
19	MCIT	Government department integration framework	Common Apps																				
20	Construction	Land Acquisition Management	Ministry App																				
21	Finance	Commercial Taxes Management	Ministry App																				
22	Home Affairs	Crime and Criminal tracking systems	Ministry App																				
23	Finance	Customs EDI	Ministry App																				
24	Commerce	Business Promotion Portal	Ministry App																				

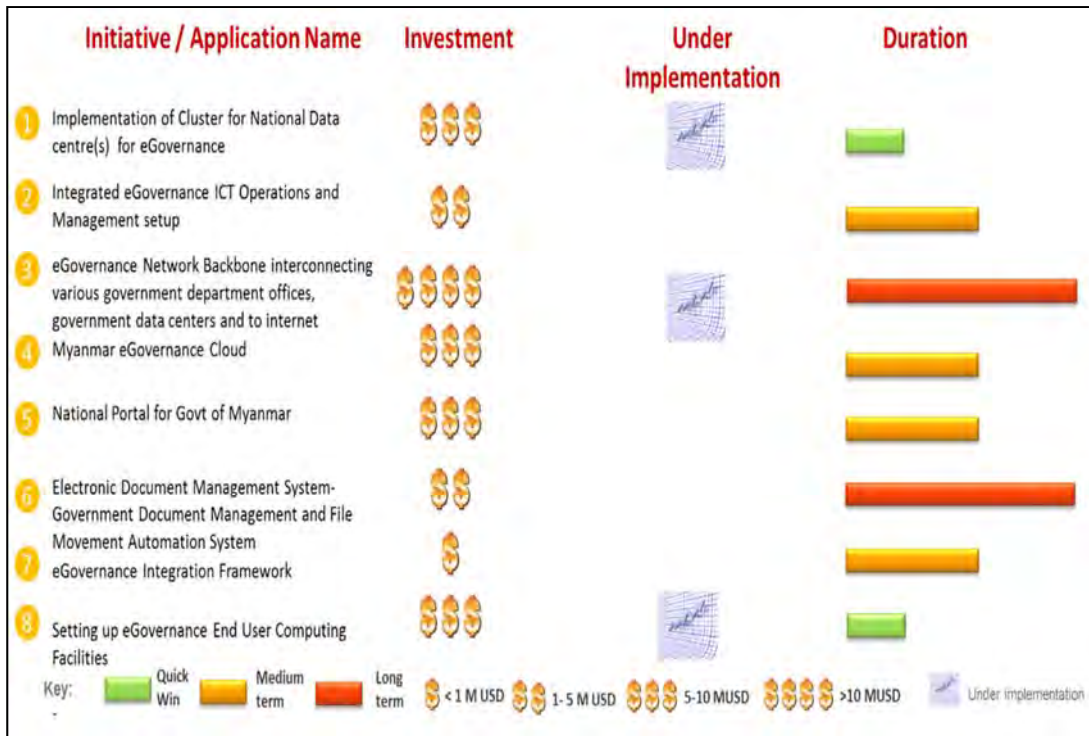


**Source: Myanmar e-Governance ICT Master Plan (2015)**

### 3.15 Sample Roadmap for Initiatives

The application detailing will have elements of impact of the implementation, investment required, global benchmarking of similar initiative in parts of the world and relevance, status and tentative duration for implementation. The structure will look similar to the structure depicted below.

**Figure (3.9) Template of Initiatives**



**Source: Myanmar e-Governance ICT Master Plan (2015)**

## **CHAPTER - 4**

### ***RESEARCH FINDINGS AND ANALYSIS***

In this chapter primary data have been processed and analyzed systematically to reach the overall findings in terms of E-governance readiness and to identify the major barriers that hinder the e-readiness process in “TAMU” Township in Myanmar. The data have been processed and analyzed from two perspectives such as supply side (i.e. the officers and the office assistants/computer operators) and demand side (i.e. the beneficiaries/ citizens). This chapter highlights on presentation of data obtained from both officials and beneficiaries/service seekers, comparison of the findings obtained from the Township and finally an attempt is made to draw a brief conclusion of the discussion.

#### **4.1 Data Obtained from Officials (Supply Side)**

##### **4.1.1 Distribution of Respondents by Age**

The distribution of respondents such as the officers and the office assistants/computer operators are consolidated below according to age.

**Table (4.1) Distribution of Respondents by Age (n=20)**

<b>Age Group</b>	<b>Frequency</b>	<b>Percentage (%)</b>
30-40	8	40%
41-50	10	50%
51-60	2	10%

From the above table it is shown that half (50%) of total respondents fall in the age group of (41-50) years and (40%) of them represents comparatively less age group(30-40 years) and the rest (2%) fall in the age group of (51-60) years.

##### **4.1.2 Ownership of a Computer at Home and Office**

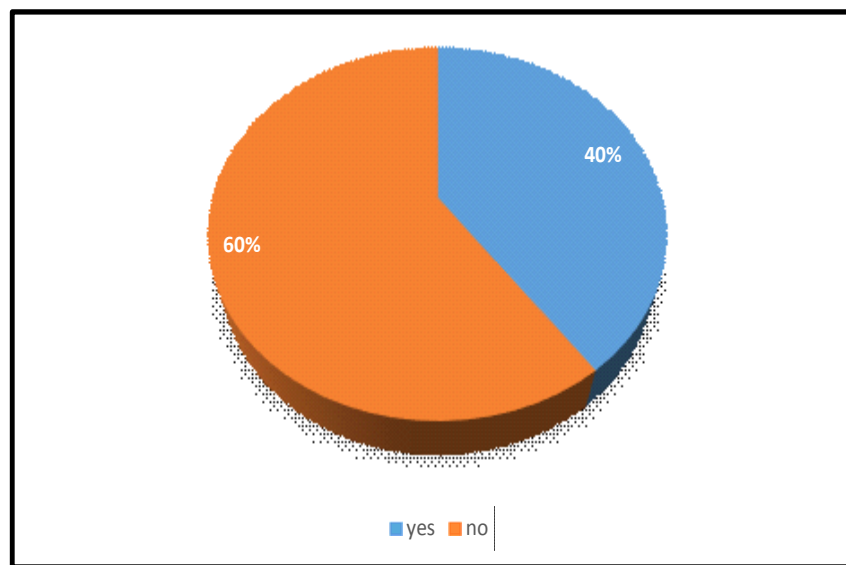
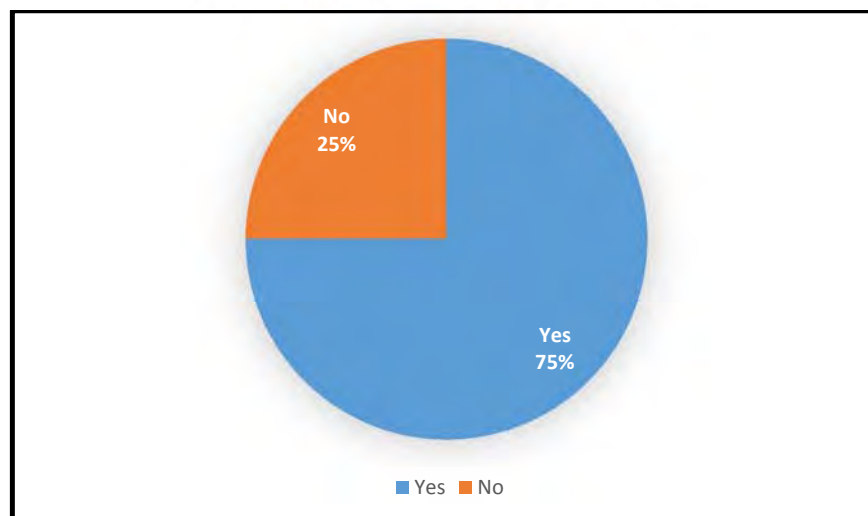
**Table (4.2) Ownership of a Computer at Home (n=20)**

<b>Owner Ship</b>	<b>Yes</b>	<b>No</b>	<b>Percentage (%)</b>
At Home	8	12	40%

**Table (4.3) Ownership of a Computer at Office (n=20)**

Owner Ship	Yes	No	Percentage (%)
At Office	15	5	75%

From the above two tables it is shown that only (40%) of the government servants have computer facilities at their home, whereas the rest (60%) do not have any computer facilities. In government offices only (75%) have computer facilities, rest (25%) do not have computer facilities at their office. The data are furnished by the following figure.

**Figure (4.1) Ownership of the Computer at Home (n=20)****Figure (4.2) Ownership of a Computer at Office (n=20)**

### 4.1.3 Internet Connection at Home and Office

**Table (4.4) Internet Connection at Home (n=20)**

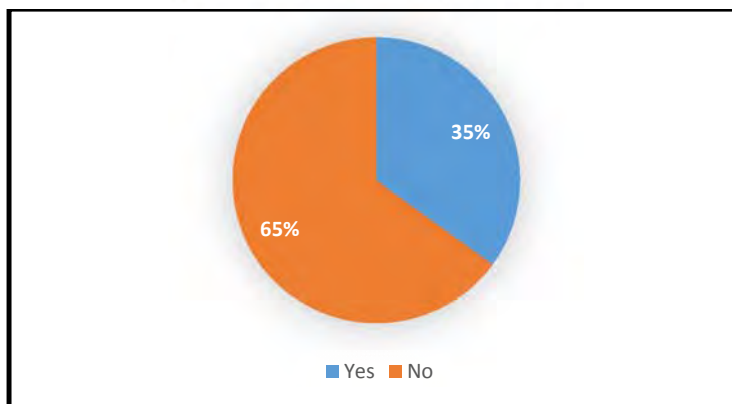
Internet Connection	Yes	No	Percentage (%)
At Home	7	13	35%

**Table (4.5) Internet Connection at Office (n=20)**

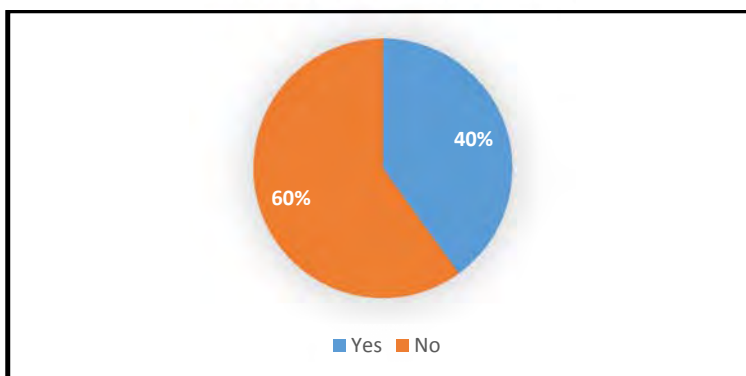
Internet Connection	Yes	No	Percentage (%)
At Office	8	12	40%

From the above two tables it is shown that only (35%) of the government servant have Internet connection in their home, whereas the rest (65%) do not have an Internet connection. At government offices only (40%) have an internet connection rest (60%) have not internet connection. The data are furnished by the following figure.

**Figure (4.3) Internet Connection at Home (n=20)**



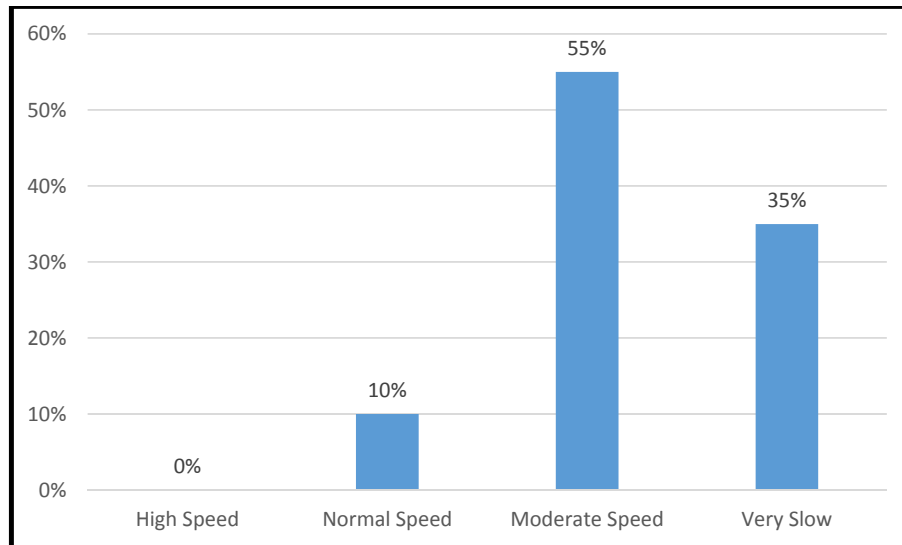
**Figure (4.4) Internet Connection at Office (n=20)**



#### 4.1.4 Speed of Office Internet and Usages of Internet for Official Activities

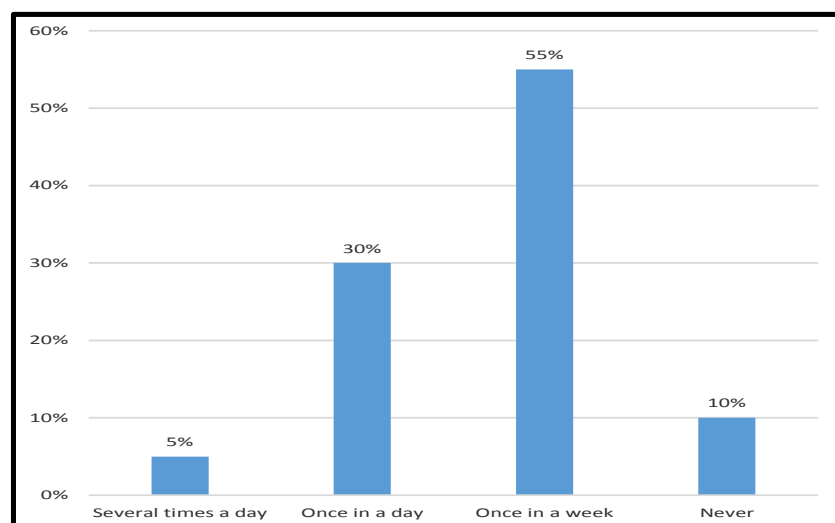
From the figure below presents the speed of the office internet.

**Figure (4.5) Speed of Office Internet (n=20)**



From the figure it is seen that the maximum (55%) of the respondents opines that the speed of the office internet is “Moderate”, whereas (35%) respondents expresses their views as “Very Slow” and conversely equal (10%), says as “Normal Speed”, and no one assumption that the internet connection is “High Speed”. However, the overall speed of the internet seems to be more or less satisfactory. Again, the primary data are presented in the figure below depicts the frequency of the Usages of Internet for official activities.

**Figure (4.6) Usage of Internet for Office Activities (n=20)**





During assessment of internet speed, it has been found to be satisfactory, while the usage of internet at workplace explores mixed information. Of the total respondents, only (5%) uses the internet at workplace several times in a day; (30%), uses internet once in a day and (55%), the highest portion, uses internet once in a week and (10%) of the employee never use the internet. On an average, it is imperative that almost (90%) of the employee more or less uses the internet in official works.

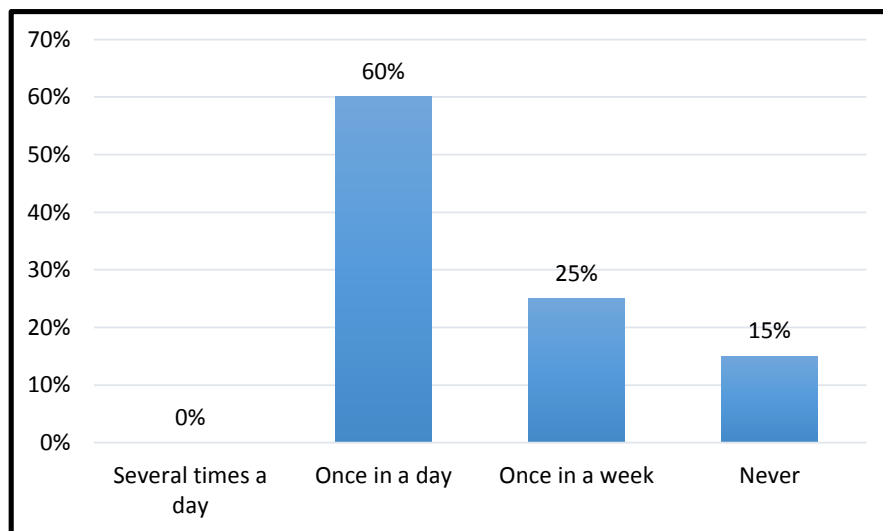
#### 4.1.5 Usage of Email

**Table (4.6) Have Percentage of Official Email Address (n=20)**

Official email address	Yes	No
Official Email have or not	85%	15%

From the above tables it is shown that only (85%) of the government servant have official email address, whereas the rest (15%) do not have official email address.

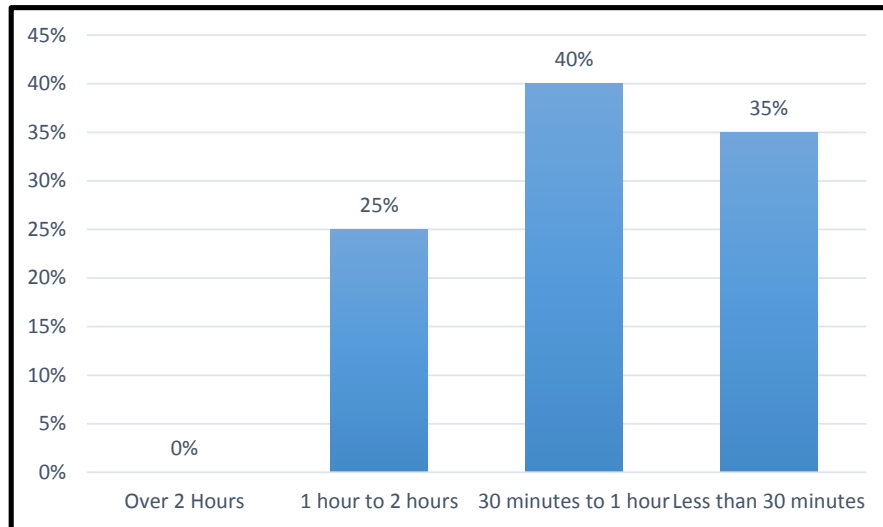
**Figure (4.7) Use of Official E-mail (n=20)**



The figure indicates that only (60%) of the respondents use e-mail once in a day and (25%) use it once in a week and (15%) never use. There are no respondents don't use email several times a day. On the other hand, the small number of the respondents, (15%) do not have an official email address.

#### 4.1.6 Daily Computer Usages at Office

**Figure (4.8) Daily Usages of Computer at Office (n=20)**

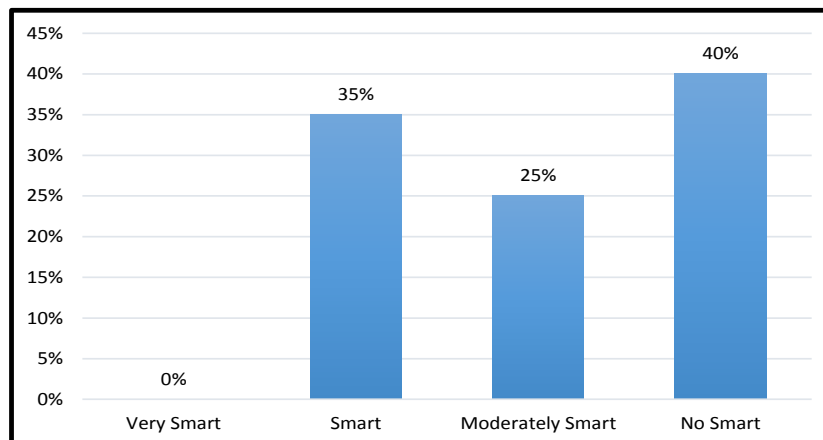


From the above figure it is seen that (25%) of the government servant use the computer for (1) hour to (2) hours, another (40%) use (30) minutes to (1) hour and another (35%) use less than (30) minutes. There are no employees found who use a computer more than (2) hours. However, the use of computers in terms of hours indicates positive trend of the employees.

#### 4.1.7 Computer Performance and Modernization

During the assessment of the respondents themselves about their capability in using computer, mixed information was revealed.

**Figure (4.9) Capability in Use of Computer (n=20)**



From the above figure it is observed that a large number of respondents (40%) rank themselves as “Not Smart”, (25%) rank moderately smart, and (35%) rank them as “Smart” in using a computer and it is also observed that there is no “Very Smart” computer user found in the study.

**Table (4.7) Capability in Computer Usage vs. Age Group Matrix (n=20)**

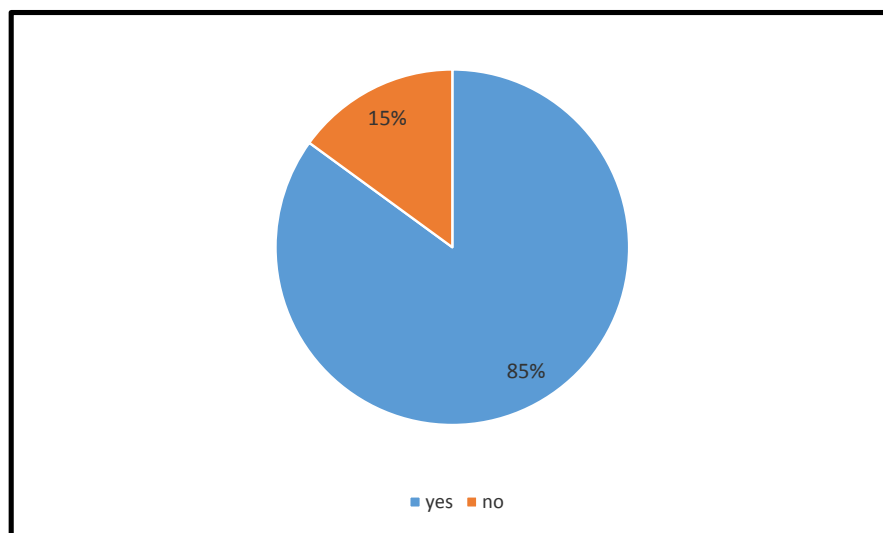
Capability in Computer Use/Age Group	30 to 40	41 to 50	51 to 60
Very Smart	-	-	-
Smart	3	2	2
Moderately Smart	3	2	
No Smart	2	6	
Total	8	10	2

The above table reveals a fascinating observation and that is the low age group (30-40 years) officials who are comparatively young are “Smart” in using computer, and this implies that comparatively young officials tend to have more capability in using computer.

#### 4.1.8 Level of ICT Training

The data are presented in the figure below indicate of the ICT training, completing level of the officers and office assistants.

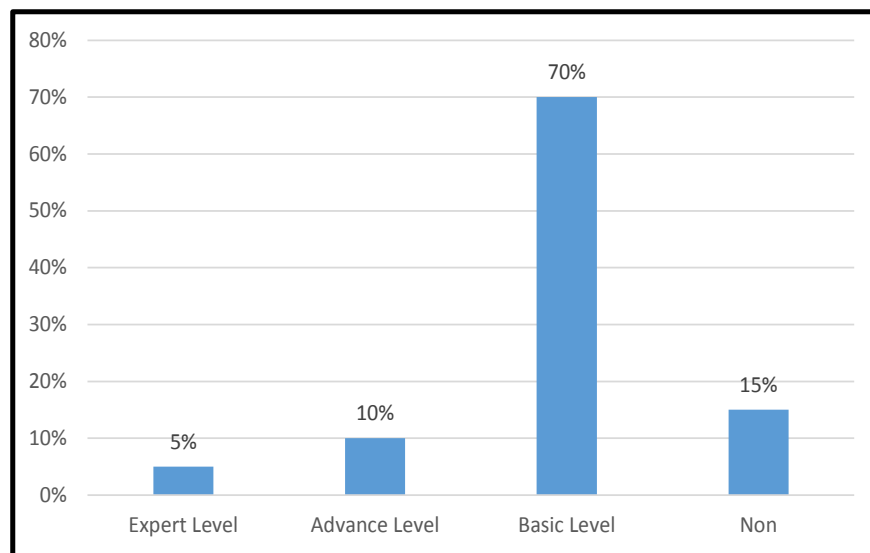
**Figure (4.10) IT training completing level (n=20)**



From the below figure it is revealed that (15%) of the total respondents do not have any ICT training and out of (85%) of the respondents only (5%) have “Expert Level”, (10%) have

“Advance Level” and the rest (70%) have “Basic Level” of ICT related training. From the information it is clear that the largest number of respondents (70%=14) exposed to “Basic Level” of ICT training which deems to be very regimented and leaves room for the policy makers to ponder over the matter.

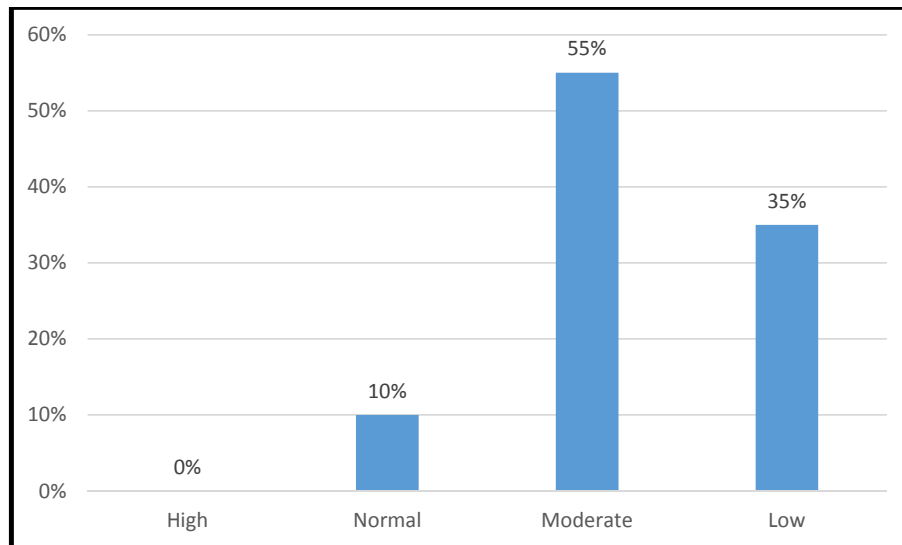
**Figure (4.11) Level of ICT Training (n=20)**



#### **4.1.9 Web Presence and Services**

In this context three things are considered together such as presence of the website, the services provided by official website and the utilization level of the existing ICT facilities at the workplace. It is found in interesting that by this time the study township has not township level official website. They have only “Union Level” and State “Level” official website. Some government official websites are inactive. Some active website provided by web-information such as notices (tender notice, notice of meeting, etc.), resolutions, complaints, various forms (downloadable form), examination schedule and results, telemedicine, reports are usually provided by the websites. All of the respondents told that they provide services through websites, but when they are asked to mention the categories of the services they mentioned only the name of notice, report & return, resolution, various forms etc. Again, the fact is justified by the perception of the respondents in terms of the utilization level of the existing ICT facilities. The data found during the study are furnished in the figure.

**Figure (4.12) Utilization Level of ICT Facilities at Workplace (n=20)**

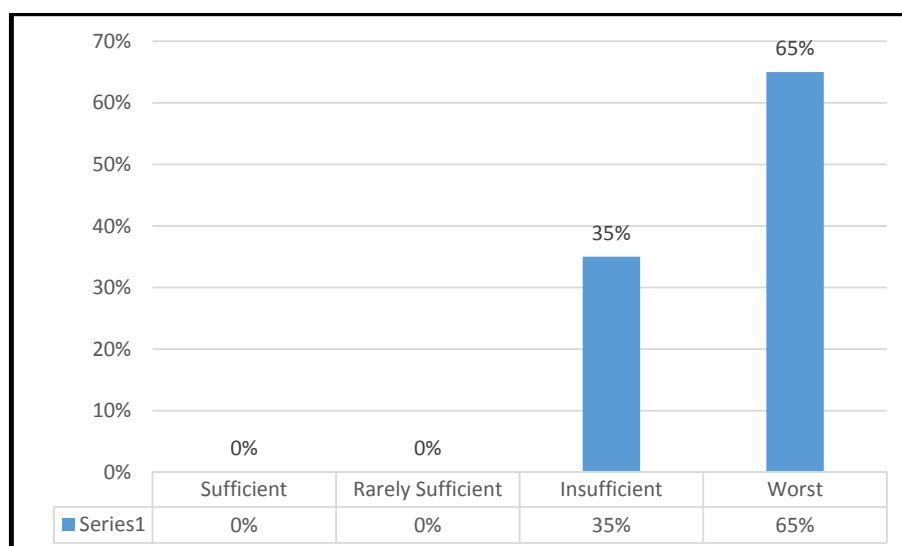


The above figure shows that (55%) of the respondents view that the utilization level of ICT facilities in the workplace is “Moderate”, whereas only (10%) said it was “Normal”, (35%) said it is “Low” and no one answer “High” in the study. It can be that the capacity of the government officials in terms of utilization of ICT facilities at the workplace is still not at a satisfactory level.

#### 4.1.10 Overall Power Situation

The data obtained in terms of overall power situation (electricity) at workplace are depicted by the graph below.

**Figure (4.13) Overall Power (Electricity) Situation at Workplace (n=20)**

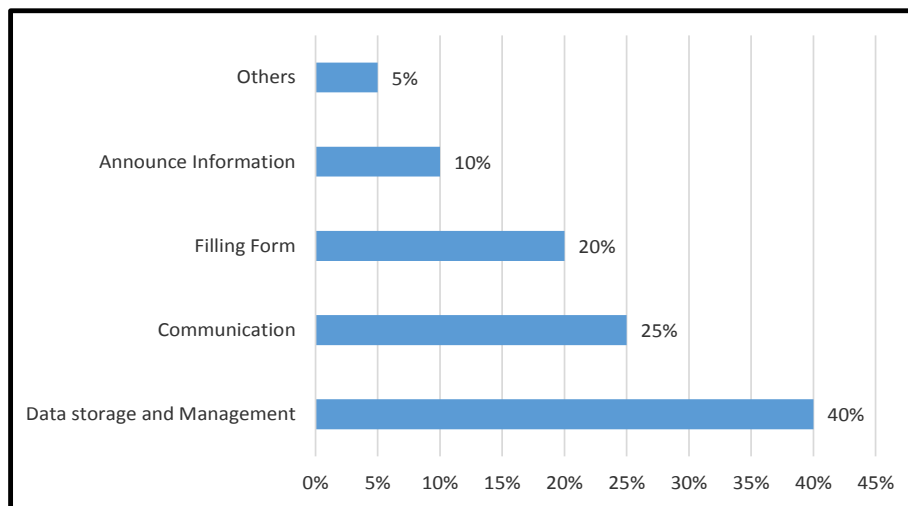


From the above figure it is observed that the majority of the respondents, (65%) mentioned that the overall power situation is “Worst”, whereas only (35%) said it is to be “Insufficient”. Rest two indicators of “Sufficient” and “Rarely Insufficient” are (0%). So power supply is really very insufficient in that township.

#### 4.1.11 Usage of E-Government for E-Governance

E-Government is a carrier of e-governance. For implementation of e-governance, e-government must be needed. Without e-government, e-governance cannot alive. Below the figure is usage of E-government for e-governance.

**Figure (4.14) Usage of E-Government for E-Governance (n=20)**

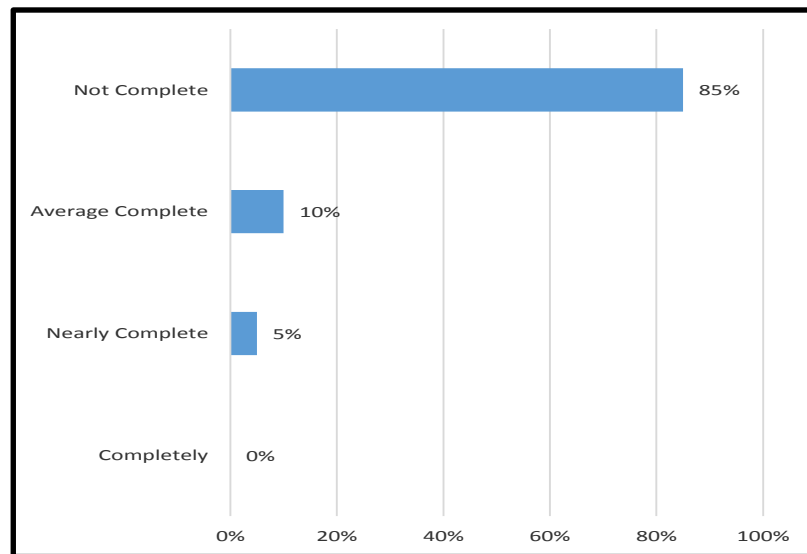


From the above figure it is observed that the majority of the respondents, (40%) mentioned that they used e-government for “Data storage and management”, whereas (25%) said it is to be “Communication”, (20%) said that for “Filling Form”, (10%) used e-government for “Announce Information” rest (5%) used for “Others”.

#### 4.1.12 Evaluation about E-Governance Readiness

From the figure below, can analysis presents of e-governance readiness indicator.

**Figure (4.15) Readiness for E-Governance (n=20)**

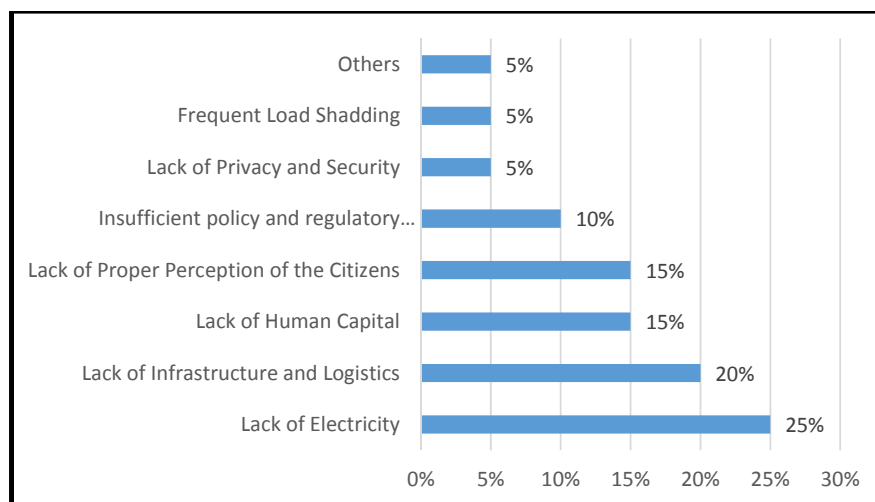


Most of the government offices do not ready for e-governance. Only (5%) are nearly ready such as “Communication Department”, (10%) are preparing and average complete and the next two years they can implement e-governance but (85%) need to change traditional governance to e-governance.

#### 4.1.13 Impediments to E-Governance Readiness

The respondents provided their opinion in terms of impediments to E-governance Readiness is presented below.

**Figure (4.16) Impediments to E-Governance Readiness (n=20)**



The figure shows that the majority of the respondents (25%) ranked “Lack of Electricity” as the most alarming barrier to E-governance Readiness to Township Administration. The next to “lack of Electricity” is “Lack of Infrastructure and Logistics” which is viewed by (20%) of the respondents. Beside these, “Lack of human capital” (15%), “Insufficient policy and regulatory Framework” (10%) and “Lack of Proper Perception of the Citizens” (15%) and (5%) each of “Frequent Load shedding”, “Lack of Privacy and Security” and “Others” are exponential impediments to E-governance readiness to Township Administration of “TAMU”.

## 4.2 Data Obtained from Beneficiaries (Demand Side)

### 4.2.1 Distribution of Respondents by Age

A total 20 beneficiaries/citizens are surveyed with the questionnaire 2 to obtain their perceptions about E-governance Readiness of the “TAMU” Township. The distribution of the respondents by age is given below.

**Table (4.8) Distribution of Beneficiaries by Age (n=20)**

Age Group	Frequency	Percentage (%)
30-40	6	30%
41-50	10	50%
51-60	4	20%

From the above table it is seen that majority of the respondents (50%) fall in the age group of 41-50 years.

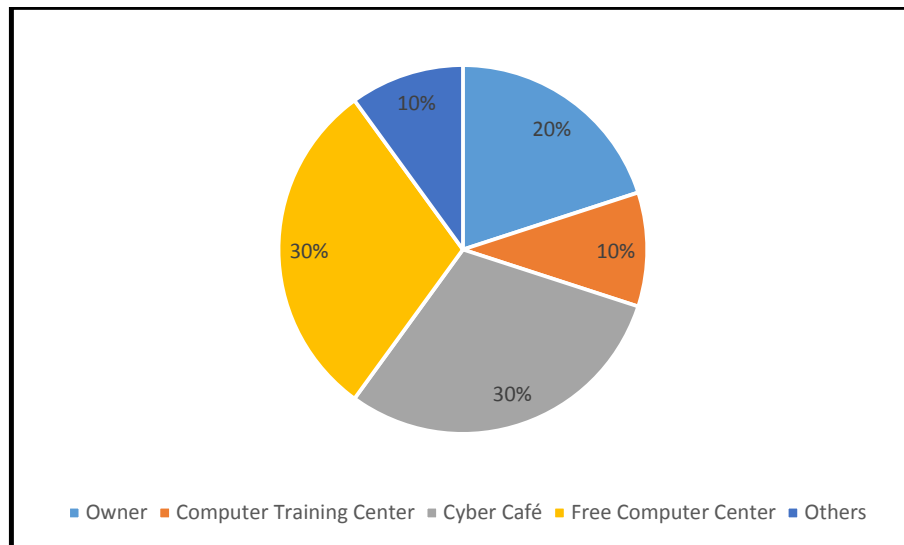
### 4.2.2 Ownership of a Computer and Usage

**Table (4.9) Ownership of Computer at Home (n=20)**

Owner Ship	Yes	No	Percentage (%)
At Home	4	16	20%

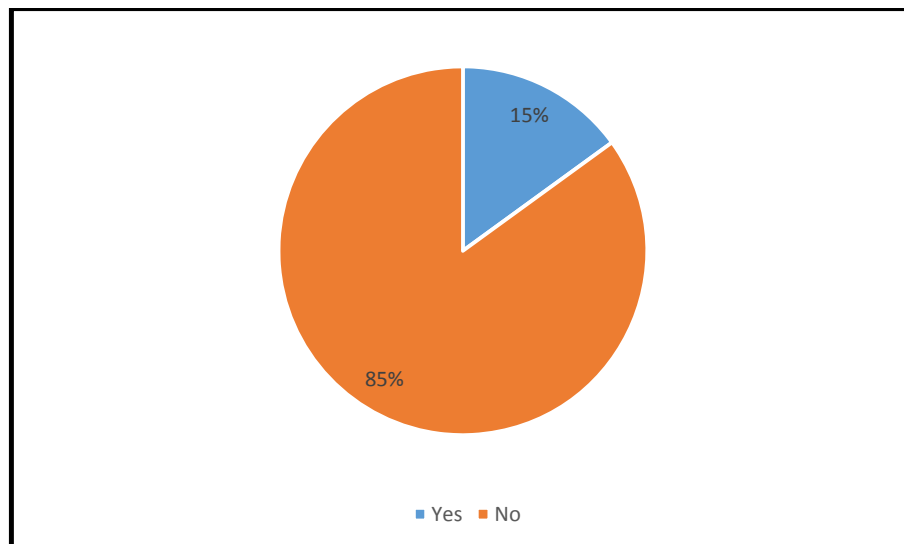
From the above two tables it is shown that only (20%) of the citizens have computer facilities at their home, whereas the rest (80%) do not have any computer facilities. In a query it has been found that almost (80%) of the respondents (n=20) do not have any computer facilities at home but they share either other’s computers or visit computer training center, cyber café, Free computer center and others use.



**Figure (4.17) Ownership of computer and usage (n=20)**

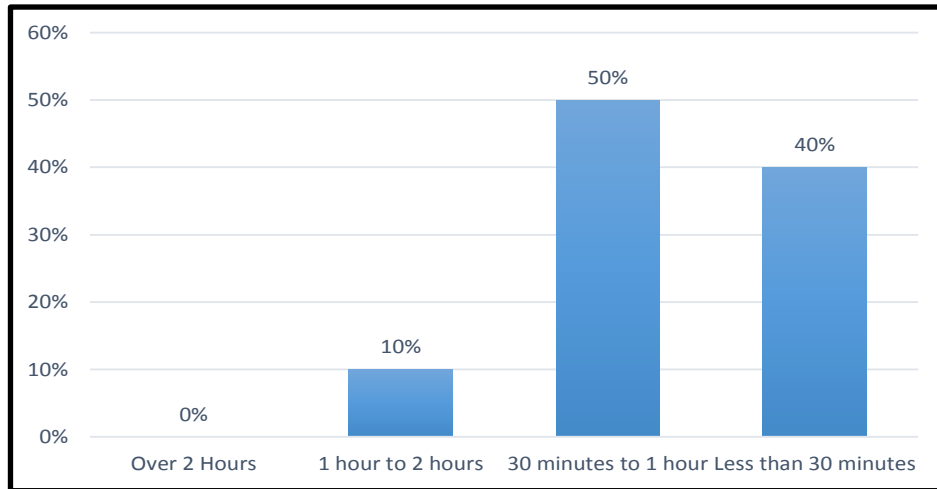
### 4.2.3 Usage of Email

From the below figure it is shown that only (15%) of the citizens have email address, whereas the rest (85%) do not have email address.

**Figure (4.18) Use of E-mail (n=20)**

#### 4.2.4 Daily Computer and Mobile Internet Usages

**Figure (4.19) Daily Computer and Mobile Internet Usage (n=20)**

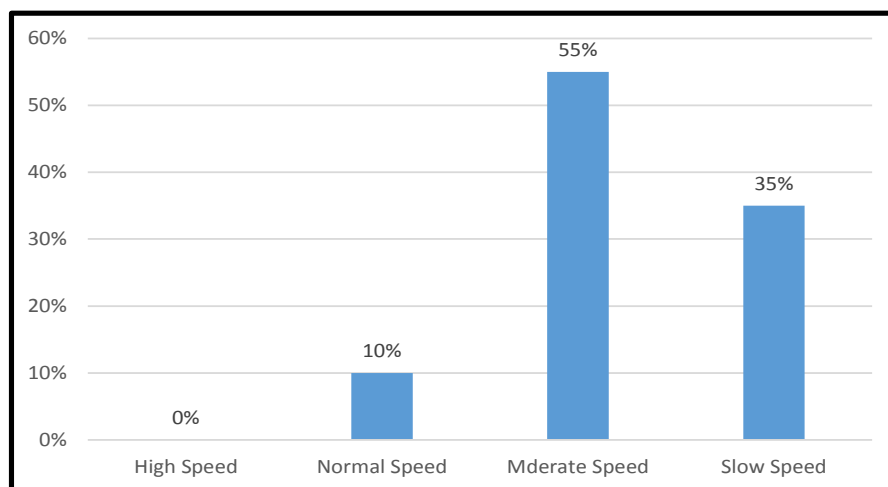


From the above figure it is seen that (10%) of the citizens who have email and internet access use the computer for (1) hour to (2) hours, another (50%) use (30) minutes to (1) hour and another (40%) use less than (30) minutes. There are no citizens found who use a computer more than (2) hours. However, the use of computers in terms of hours indicates positive trend of the citizens.

#### 4.2.5 Speed of Internet

From the figure below presents the speed of the internet.

**Figure (4.20) Speed of Internet (n=20)**

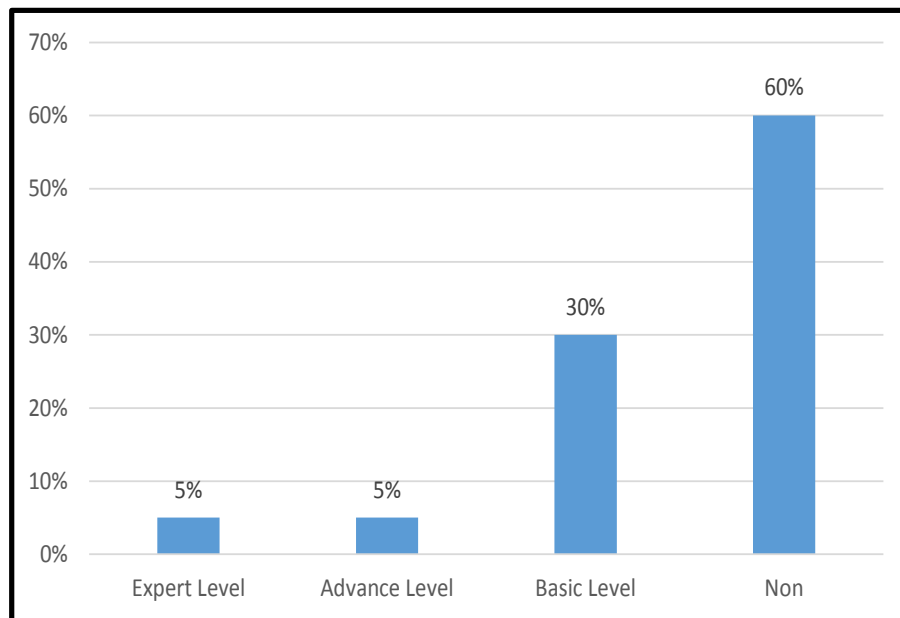


From the figure it is seen that the maximum (55%) of the citizens opines that the speed of the internet is “Moderate”, whereas (35%) citizens, expresses their views as “Very Slow” and conversely equal (10%), says as “Normal Speed”, and no one assumption that the internet connection is “High Speed”.

#### 4.2.6 Level of ICT Training

From the below figure it is revealed that (60%) of the total Citizens do not have any ICT training and out of (40%) of the respondents only (5%) have “Expert Level”, (5%) have “Advance Level” and the rest (30%) have “Basic Level” of ICT related training. From the information it is clear that the largest number of respondents (60%=12) have not ICT training.

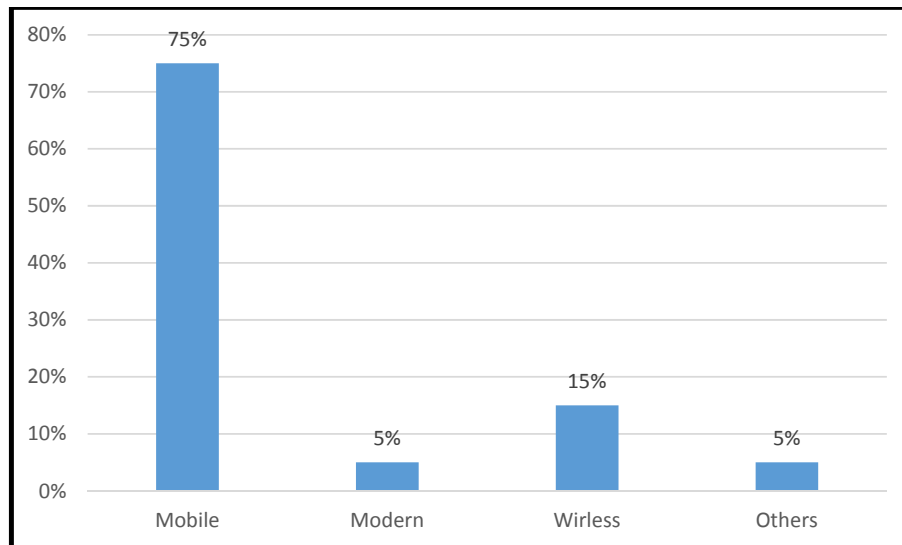
**Figure (4.21) Level of ICT Training (n=20)**



#### 4.2.7 Source of Internet Connection

It is interesting that the main source of most of the internet connection received by the citizens is “Mobile Phones”. The scenario is described by the figure below.

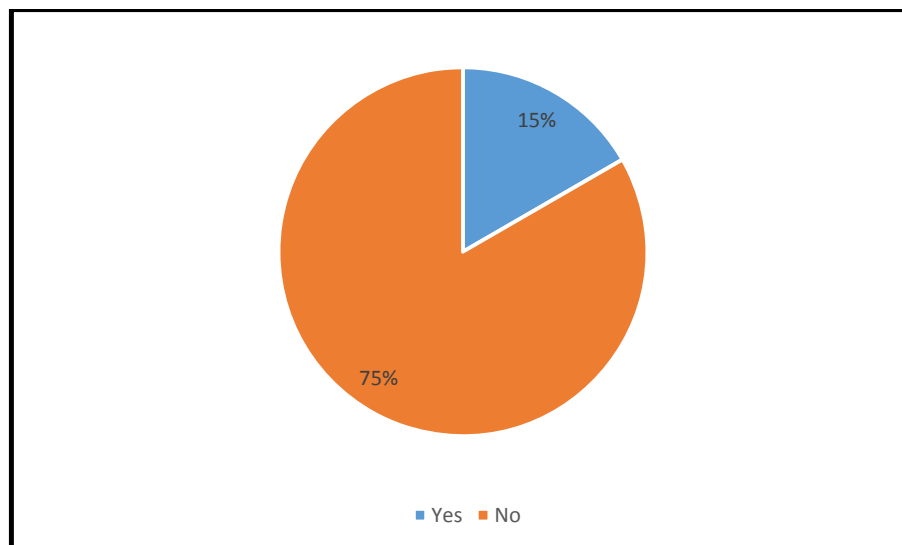
**Figure (4.22) Source of Internet Connection (n=20)**



#### **4.2.8 Beneficiaries' Perception About ICT Related Services**

During the study it is not found that almost identical services are sought by the service seekers/ beneficiaries. Out of 20 respondents, only 9 have ideas about ICT and the rest 11 do not have any idea about this, which is depicted by the following graph.

**Figure (4.23) Beneficiaries' Perception about ICT (n=20)**



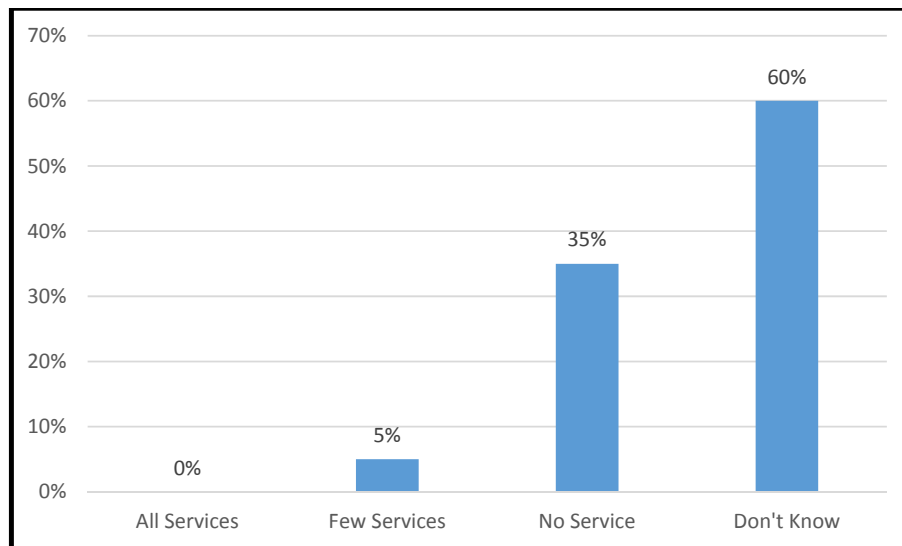
From the above figure is seen that only (25%) of the respondents have ideas of ICT and the rest (75%) do not have any idea in this regard. Further, out (25%) (5 out of 20) those who have

ideas about ICT, only (10%) (2 out of 20) knows that the government offices should provide e-Services to people and the rest (15%) still do not have any knowledge about it.

#### 4.2.9 Web presence of Services

In response to a query whether the expected services to citizens such as various forms, documents, notes, examination results, etc. are available on a website or not, an interesting result revealed.

**Figure (4.24) Web Presence of E-Services (n=20)**

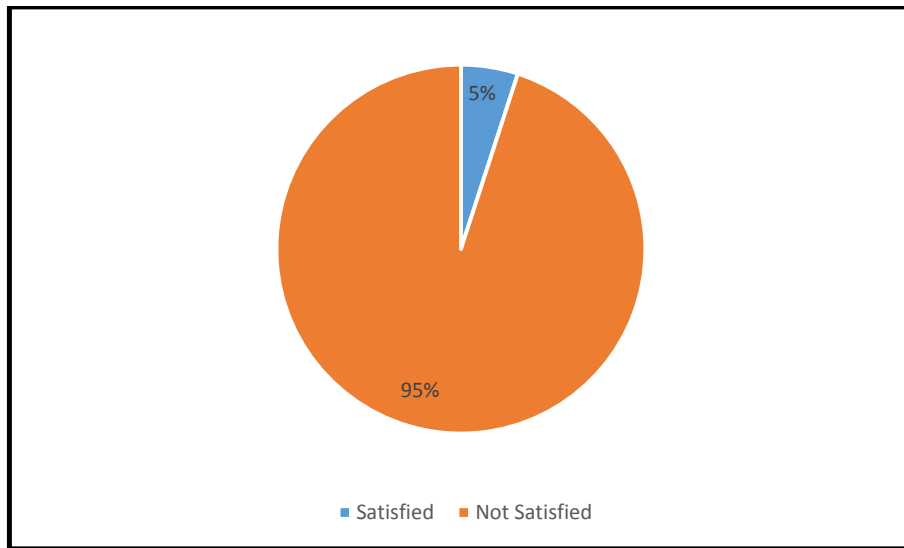


The above figure indicates that although the township government offices don't provide a multiple of services, but it is rarely available (5%) on the websites from Union Official website. It is surprising that a large number of respondents (60%) "Don't know" about the web presence of the Services and (35%) of the respondents opined that E-Services are "Not Available" on the website.

#### 4.2.10 Satisfaction level of Present E-Service

In another query almost (95%) of the respondents (19 out of 20) told that they are "Not satisfied" with the present service delivery system, and (100%) of them want it to be improved and accelerate which is depicted in the figure below.

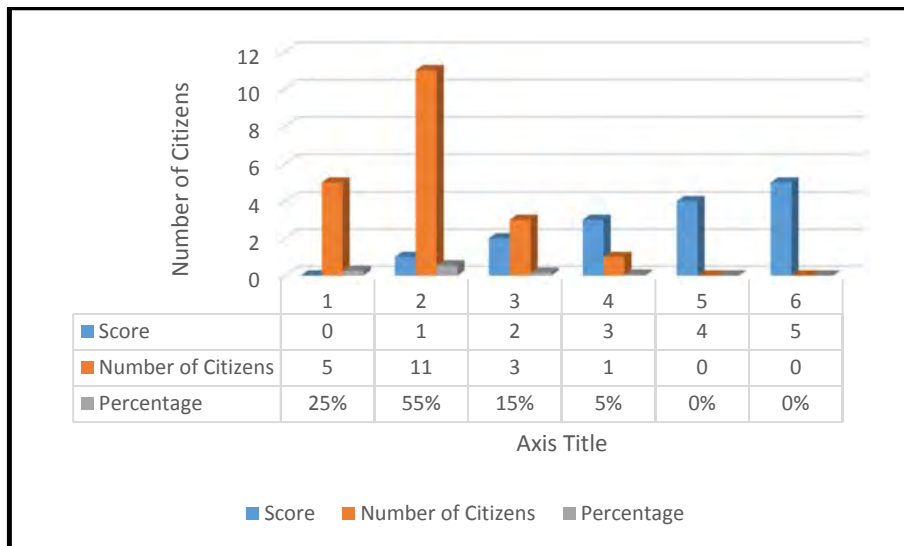
**Figure (4.25) Level of Satisfaction with Present E-Services (n=20)**



**4.2.11 Evaluation of Overall E-Governance Readiness**

To evaluate the overall E-governance Readiness, the beneficiaries/ service seekers are asked to grade on a scale from 0 to 5. The overall scenario of E-governance Readiness from the perspective of the beneficiaries/ service seekers is presented by the figure.

**Figure (4.26) Evaluation of E-Governance Readiness by Beneficiaries (n=20)**



From the above figure it is seen that most of the citizens (55%) scored (1), (25%) of the citizens scored (0), (15%) citizens scored (2), and only (5%) of citizens scored (3). The highest score is 1. So “TAMU” e-governance stage is very beginning. This evaluation is based on a (0) to (5) scale, and it focuses on demand side’s perception of e-governance Readiness.

### **4.3 Summary of Findings**

Integrating ICTs in the public administration, naming, e-government or e-governance has become a part of global political agenda.

Traditional forms of services have to be continued in parallel with the electronic forms of services.

Government alone cannot ensure successful implementation of e-governance, rather, partnerships and collaborations with business sector, and citizens’ participation are also need. Each country has its own context to devise own approach for introducing e-governance.

In developing countries, low level of purchasing power of general people, lack of electricity, lack of telecommunication and ICT infrastructure, lack of human resource and to access to use PC and need ICT training, an inadequate less integration of operations between government and citizens is a serious constraint on e-government reach and expansion.

### **4.4 Discussion**

In the above findings, there are some useful observations are revealed which are validated by “UN Five Stage Model of E-governance Maturity” to have an assessment of E-governance readiness of the field level administration in general and the study area in particular.

First and foremost, it is observed that the offices of the study area “TAMU” have no web presence with their official websites. But some of the government offices are preparing to create official website.

Secondly, some of the respondents said that, forms, notices, resolutions, examination results, etc. are not available on the township level official websites and they found some limited information from Union website. Hence, the township office e-governance stage is the criteria of “Emerging Stage”.

Thirdly, during the study it is found that although websites and increased information are not available. Only (5%) of the beneficiaries told that they got “Few Services”, whereas (35%) said “Not available” and (60%) said “Don’t Know”. Due to low utilization capacity of officials in terms of ICT facilities. These findings are further cross-verified by the findings of impediments to E-governance Readiness where (25%) of the respondents from supply side told that due to “Lack of Electricity”. Further, it is found that (5%) of the respondents are “Satisfied” upon the present e-governance system, whereas (95%) are “Not Satisfied”. Hence the perception of the citizens is no longer positive about the readiness of e-governance.

Besides, the speed of office internet is found to be (55%) “Moderate Speed”, (35%) of the respondents said it is “Slow Speed” only (10%) said “Normal Speed” and no one said “High Speed”. In case of impediments to overall E-governance readiness, only (20%) of the respondents expressed their views that “Lack of infrastructure and logistics” hampers the overall preparedness. Rather, it can be said that at present infrastructure and logistics is not a problem at all. Also, (15%) of “Lack of Human Capital” is also hampered for e-governance. Therefore, the summary of the findings in this regards is that there are “Electricity”, “Infrastructure and Logistics”, “Web Presence”, and “Perception” are necessarily sufficient except highly qualified human capital, the study area “TAMU” does not qualify all the criteria of “Enhanced Stage of E-governance Maturity level” rather it has achieved the criteria partially. Hence, the latter four stages such as “Enhanced”, “Interactive”, “Transactional” and “Connected” are needed, but not necessary to assess as it is deemed that the study areas are not fully passed the current first stage (Emerging) of readiness.

This dissertation has used (5) independent variables (Electricity, Human capital, Infrastructure and logistic support, Web presence, and Citizens’ perception) and 1 dependent variable (e-governance readiness). Mostly these 5 independent variables are requirement and difficulties of township level office, to reach e-governance readiness.

For supply side, there have for independent variables. First variable is electricity, electricity requirement is very high (65%) mentioned that the overall power situation is “Worst”, so electricity is low. Second variable is human capital, there have three main indicators and 2 sub indicators. Competency, accessibility to ICTs, and Usability is average point. Third variable is infrastructure and logistic support. There have four indicators. Computer accessories at work place is (85%), internet connection at work place is (40%) and internet connectivity speed at workplace, (55%) of the respondents opines that the speed of the office internet is “Moderate”,



so generally infrastructure and logistic support is medium. Fourth variable is web presence. There have two variable, availability of e-service and affordability of e-service are only (5%) are nearly ready. So it indicator are very low.

For demand side, there has only one independent variables is Citizens' perception. There have two main indicator, citizens' perception about ICTs and Accessibility to ICTs. The large number of respondents (60%) "Don't know" about the web presence of the Services. It is huge amount and that indicator is low. Ownership of computer is only (20%) and (30%) of respondent use cyber café. So that indicator is medium. But (75%) get internet access from their mobile. That indicator is normal.

The major factors revealed in the study are "Lack of Electricity", "Lack of Infrastructure and Logistics", "Lack of Human Capital", "Lack of Proper Perception of the Citizens", "Insufficient Policy and Regulatory Framework", "Frequent Load Shedding", and "Lack of Privacy and Security. Of these, "Lack of Electricity" is found to be the most prominent barrier to the E-governance readiness for "TAMU" Township.

We will discuss in the next chapter the overall conclusion and try to come up with some SMART and specific recommendations.

## **CHAPTER - 5**

### ***CONCLUSION AND RECOMMENDATIONS***

This chapter intends to present an overall conclusion and recommendations of the study. In the conclusion part the results are analyzed in line with the variables incorporated in the analytical framework and then the second part recommendations are made herewith to draw the attention of the policy makers.

This study has two main objective. These are:

1. To know the effectiveness of the e-governance service delivery at the Township level in Myanmar.
2. To evaluate the impacts of e-services to the service receivers or citizens at the level of Township in Myanmar.

For supply side the main weakness is electricity. Some of government offices use PC (Personal Computer) and LAN (Local Area Network) to connect between PC. But insufficient electricity problem is a huge barrier for developing e-governance and other barriers are require for e-governance service. For demand side citizens' perception are very low and (60%) citizens don't know about web presence. Need citizen education about e-governance service.

#### **5.1 The Main Findings**

The reasons for this are mainly in the supply side the main weakness is non availability of electricity. Some of government offices use PCs (Personal Computer) and LAN (Local Area Network) to connect between PCs. But insufficient electricity problem is a huge barrier for developing e-Governance and other barriers are require for e-governance service. For demand side citizens' perception are very low and 60 percent citizens don't know about web presence and utility of e-services. Thus, there is urgent need for citizen education about e-governance services.

#### **5.2 Conclusion**

E-governance has become a new fashion in the debate of public administration. At the edge of globalization, it has become the demand of time to translate the literature of E-governance into reality in the public sector administration of MYANMAR. Keeping the urge in mind the study

is conducted to reveal the status of E-governance Readiness of field level bureaucracy especially the Township Administration. The findings obtained from both demand and supply sides are crossed verified to have a common understanding of the overall scenario of E-governance of Township bureaucracy in general and “TAMU” in particular. In the study Lack of Electricity, lack of infrastructure and logistics, human capital, web presence and perception of beneficiaries are taken into consideration for verifying the dependent variable, E-governance Readiness.

The study reveals that the capability of officials in using a computer is not up to the mark. Their utilization level of computer facilities in the workplace is considerably low. The younger officials tend to have more capability in using computer. Beside this, most of the officials do not have enough training; rather they have only elementary ICT training. In terms of analysis of factors that affect the e-readiness, it is also observed that due to lack of Electricity, lack of human capital, implementation of E-governance in “TAMU” is being hindered. In case of infrastructure and logistics, it is found that the offices have reasonable support of infrastructure and logistics. It is also evident that the trend in using the computer and internet by the employee is gradually increasing. Lack of infrastructure and logistics have deemed to be minimal effect on e-readiness at the field level administration right now. Every office has not website of its own. So all offices need to create own website and it should be improved. In context for perception of the beneficiaries, it is found that the beneficiaries or the citizens are not aware enough about ICTs. Most of them said that they feel comfortable using a mobile phone in availing e-services, but they only use social networks like Facebook. They are found not satisfied in terms e-service delivery because they don't get e-service from township level office. So, it is beyond doubt that the township administration of “TAMU” is not ready enough to cater e-services to the citizens.

However, the overall E-governance readiness of field level bureaucracy or Township administration of “TAMU” is not at the satisfactory level. Due to lack of electricity, lack of infrastructure and lack of human capital the readiness process is being hampered. As the Township administration is the main engine of implementing E-governance initiatives, it should have proper training and skill to translate the essence of E-governance into a reality.

## **5.3 Recommendation**

With a view to the ranks of top ICT-ready countries, it is of paramount importance to have a holistic approach of E-governance readiness. Hence, the policy makers should be very careful in implementing E-governance initiatives in the public sector administration of MYANMAR. The following recommendations are made herewith based on the major findings of the study.

### **5.3.1 Electricity**

Electricity is very important for e-governance. It is the most important. Without electricity, all of the electronic device cannot run. In this study first problem is electricity. The overall power situation is “Worst” because one day only 2 hours can distribute electricity. So power supply is very bad in that township.

### **5.3.2 Skilled Manpower**

The government officials are the main engine of E-governance implementation. So, they should be well-equipped and technologically sound. At present, E-governance readiness is being hindered due to lack of trained workforce. That’s why the government should pay proper attention to the special training program for the field level officials with utmost priority.

### **5.3.3 Speed of Internet Connectivity**

The speed of the official Internet is still seems to be very low. For successful implementation of E-governance high speed Internet connectivity is a prerequisite. The government should ponder over the matter with utmost sincerity and take necessary action for providing high speed Internet connectivity at government offices.

### **5.3.4 Awareness of the Citizen**

The citizens or the end users of the e-services are not aware enough. Many of them have negative perceptions about E-governance preparedness of bureaucracy. So, the government should make arrangements for creating awareness among citizens about E-governance benefit. Strengthening MCIT: Today MCIT (Ministry of Communication and Information Technology) have become important vehicles for disseminating e-services to the citizens. The government should have pragmatic steps to make the MCIT functional more.

### **5.3.5 Narrowing the Digital Divide**

In the study it is observed that there are an evident digital gap between the center and the periphery. So, the government should give more attention to those Township situated at the periphery with a view to minimizing the visible digital divide.

Albeit E-governance is relatively a new concept in the public sector administration of MYANMAR, there is hardly any study available for benchmarking the assessment of E-readiness. So, there is still enough scope for further in-depth research in the context of E-readiness, missing links and knowledge gap associated with this field.

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<a href="https://e-estonia.com/the-story/digital-society/cyber-security/">https://e-estonia.com/the-story/digital-society/cyber-security/</a>	(8-5-2015)
<a href="http://www.ida.gov.sg">http://www.ida.gov.sg</a>	(12-5-2015)
<a href="https://www.yatanarponca.com.mm/index.html">https://www.yatanarponca.com.mm/index.html</a>	(14-5-2015)
<a href="http://www.ipa.go.jp/english/humandev/forth.html">http://www.ipa.go.jp/english/humandev/forth.html</a>	(14-5-2015)
<a href="http://www.unpan.org/Library/MajorPublications/PublicEGovernanceSurvey/PublicEGovernanceSurveyintheNews/tabid/651/Default.aspx">http://www.unpan.org/Library/MajorPublications/PublicEGovernanceSurvey/PublicEGovernanceSurveyintheNews/tabid/651/Default.aspx</a>	(15-5-2015)
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<a href="http://www.mcit.gov.mm/sites/default/files/edms%20manual.pdf">www.mcit.gov.mm/sites/default/files/edms%20manual.pdf</a>	(30-5-2015)
<a href="http://www.mcit.gov.mm/sites/default/files/GPMS%20Manual.pdf">www.mcit.gov.mm/sites/default/files/GPMS%20Manual.pdf</a>	(31-5-2015)
<a href="http://www.mcit.gov.mm/sites/default/files/gw%20Manual.pdf">www.mcit.gov.mm/sites/default/files/gw%20Manual.pdf</a>	(3-6-2015)
<a href="https://books.google.com.bd/books?id=p03ewTGgQN4C&amp;pg=PA89&amp;lpg=PA89&amp;dq=http://archive.cabinetoffice.gov.uk/e-envoy/resources-pdfs/%24file/Strategy.pdf&amp;source=bl&amp;ots=2FUbBXmMHj&amp;sig=0hdCTIb5RbLMudiTlewwIo36hSI&amp;hl=en&amp;sa=X&amp;redir_esc=y#v=onepage&amp;q=http%2F%2F%3Aarchive.cabinetoffice.gov.uk%2Fe-envoy%2Fresources-pdfs%2F%24file%2FStrategy.pdf&amp;f=false">https://books.google.com.bd/books?id=p03ewTGgQN4C&amp;pg=PA89&amp;lpg=PA89&amp;dq=http://archive.cabinetoffice.gov.uk/e-envoy/resources-pdfs/%24file/Strategy.pdf&amp;source=bl&amp;ots=2FUbBXmMHj&amp;sig=0hdCTIb5RbLMudiTlewwIo36hSI&amp;hl=en&amp;sa=X&amp;redir_esc=y#v=onepage&amp;q=http%2F%2F%3Aarchive.cabinetoffice.gov.uk%2Fe-envoy%2Fresources-pdfs%2F%24file%2FStrategy.pdf&amp;f=false</a>	(5-6-2015)
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## APPENDIX A: Request letter for Interviewer



**BRAC University**  
**MA in Governance and Development**  
**BRAC Institute of Governance and Development**  
**BRAC University, Dhaka, Bangladesh**

**E-Governance Implementation In Township Level In  
 MYANMAR**

Survey Questionnaire for e-Governance

Date.....

Dear Participant

I am Phone Thant, I am a student of BRAC University and I am attending a Master of Arts in Governance and Development Course at BRAC University in Bangladesh. I am working under the Ministry of National Planning and Economic Development Myanmar. Before coming to Bangladesh for this study I was working at the Central Statistical Organization (CSO) as a District Officer. My work service is almost 10 years. In the course of fulfilling my thesis requirement for the Master Degree, I am conducting this survey for a research study.

The Title of the study at BRAC University in Dhaka, Bangladesh is “**E-Governance Implementation In Township Level In MYANMAR**”. The study is focused on the importance of Governance and Development for developing countries. Even though this study is a part of academic activity of the MAGD program, this study will be useful for the successful implementation of e Governance in any of the developing countries and it will be especially beneficial to review the e government development programs in Myanmar.

I choose you as one of the respondents to fill the survey questionnaire, to share your experiences. This questionnaire has been designed to collect information from government

officials, IT experts, some service level employees working in government service and citizens in developing countries. Your assistance in this research study is vital, even though your participation in this interview is completely voluntary. The purpose of this survey is to learn more about the legal aspects of e-government programs in developing countries. It will take almost 15 minutes to fill the questionnaire. I hope you will enjoy in filling this questionnaire and ready to response the questions.

Anything you fill in the survey questionnaire is strictly confidential. Nothing you say will be personally attributed to you in any reports that result from this survey. All reports will be written in a manner that no individual comment can be attributed to a particular person. **The survey questionnaire will be used only for this study and will not be used for other purposes.** I would like to request you to participate in the survey.

For further information or clarification on any of the questions in the survey questionnaire or the whole research study, please contact me at: BRAC-CDM, Khagan, Savar, Dhaka, Bangladesh. Tel: +8801799437505, [phonethant@gmail.com](mailto:phonethant@gmail.com).

Sincerely

Phone Thant

Staff Officer

Student of MAGD 6, BRAC University

Dhaka, Bangladesh

Tel: +8801799437505

[phonethant@gmail.com](mailto:phonethant@gmail.com)

**(Please email the completed questionnaire by the 17<sup>th</sup> July 2015 on the above email)**

**Appendix B Questionnaire for Officials**  
**E-Governance Implementation In**  
**Township Level In MYANMAR**

Survey Questionnaire for e-Governance

By

PHONE THANT

BU ID: 14272023



**MASTER OF ARTS IN GOVERNANCE AND DEVELOPMENT (MAGD-6<sup>th</sup>)**

**BRAC INSTITUTE OF GOVERNANCE AND DEVELOPMENT (BIGD)**

**BRAC UNIVERSITY, DHAKA, BANGLADESH**

**JULY 2015**

# QUESTIONNAIRE FOR OFFICIALS

## E-GOVERNANCE IMPLEMENTATION IN TOWNSHIP LEVEL IN MYANMAR

[Note: The answers given to these questions will be used for academic research only]  
[Your sincere cooperation will add a lot of value to the research]

Date.....

Number .....

### Section (1) Information

Name (Optional)	Designation	Age	Sex		Work Place
			Male	Female	

### Section (2)

**Please Mark “Yes” or “No”**

No	Question	Yes	No
1	Do you have any computer at home? (Desktop, Laptop, etc....)		
2	Do you have internet connection at your home?		
3	Do you have computer facilities at your office?		
4	Do you have internet connection at your office?		
5	Do you have e-mail address?		
6	Do you have official ICT training?		
7	Have official website at your office?		
8	Do you use any website or social network?		

**9. If you have any official ICT certificate what is the level of the training?**

Expert	Advance	Basic	Non

**10. How smart your computer facilities? (Smart = your computer “Performance and Modernization”)**

Very Smart	Smart	Moderately Smart	No Smart

**11. On average how long do you use computer daily?**

Over 2 hours	1 hour to 2 hours	30 minutes to 1 hour	Less than 30 minutes

**12. What is the speed of the internet connection at your home?**

High Speed	Normal	Moderate	Slow

**13. What is the speed of the internet connection at your office?**

High Speed	Normal	Moderate	Slow

**14. How often do you use internet for your official activities?**

Several times a day	Once in a day	Once in a week	Never

**15. How often do you use your official e-mail for communication?**

Several times a day	Once in a day	Once in a week	Never

**16. What is the utilization level of the existing ICT facilities at your workplace?**

High	Normal	Moderate	Low

**17. What is the overall power situation (electricity) at your workplace?**

Sufficient	Rarely Sufficient	Insufficient	Worst

**18. How to use e-Governance in your office? (You can choose all possible options)**

For Data storage and Data Management	For Communication	For Filling forms	For announce Information	Others

**19. What is your evaluation about e-governance readiness of your office?**

Completely	Nearly Complete	Average Complete	Not Complete

**20. Do you think are there any impediments/barriers to e-governance readiness? (You can choose all possible options)**

Lack of human capital	Lack of infrastructure and logistics	Frequent Load shedding	Insufficient policy and regulatory framework	Lack of proper perception of the citizen	Lack of privacy and security	Lack of Electricity	Others

**21. Do you provide any service through the official website? IF “Yes”, please put the name of the services you provide.**


---

Thanks for your kind cooperation

Signature \_\_\_\_\_  
 Name \_\_\_\_\_  
 Date \_\_\_\_\_

**Appendix C Questionnaire for Beneficiaries**

**E-Governance Implementation In  
Township Level In MYANMAR**

Survey Questionnaire for e-Governance

By

PHONE THANT

BU ID: 14272023



**MASTER OF ARTS IN GOVERNANCE AND DEVELOPMENT (MAGD-6<sup>TH</sup>)**

**BRAC INSTITUTE OF GOVERNANCE AND DEVELOPMENT (BIGD)**

**BRAC UNIVERSITY, DHAKA, BANGLADESH**

**JULY 2015**

# QUESTIONNAIRE FOR BENEFICIARIES

## E-GOVERNANCE IMPLEMENTATION IN TOWNSHIP LEVEL IN MYANMAR

[Note: The answers given to these questions will be used for academic research only]  
[Your sincere cooperation will add a lot of value to the research]

Date.....

Number .....

### Section (1) Information

Name (Optional)	Designation	Age	Sex		Work Place
			Male	Female	

### Section (2)

**Please Mark “Yes” or “No”**

No	Question	Yes	No
1	Do you have any computer facilities at your home?		
2	Do you have e-mail address?		
3	Do you know the government offices provide E-Services to the citizen?		
4	Do you have any idea about the use of ICTs?		
5	Do you think ICTs are using in providing the services you are asking for?		
6	If the answer is “No”, then do you think that ICTs can be used to provide the service?		
7	Do you think the forms/ information you seek available in the web site regarding the service?		
8	Do you think the use of ICTs in the government offices can accelerate the service delivery?		
9	Are you satisfied with the present e-service delivery system of government offices?		
10	If “No”, do you think the present service pattern should need to be improved?		

**11. If you have any official ICT certificate what is the level of the training?**

Expert	Advance	Basic	Non

**12. On average how long do you use computer daily?**

Over 2 hours	1 hour to 2 hours	30 minutes to 1 hour	Less than 30 minutes

**13. If you don't have computer facilities then how do you avail the e-services?**

Computer Center	Cyber Café	Free Computer Center	Others



**14. What is the speed of the internet connection at your home?**

High Speed	Normal	Moderate	Slow

**15. Do you have any access on the website?**

Every Access	Common Access	Limited Access	Few Access

**16. How do you get your maximum e-services?**

Mobil	Modern	Wireless	Others

**17. Do you get web presence of e-Service?**

Get all service	Few	Not available	Don't know

**18. As a service seeker, what is your overall evaluation about E-Governance Readiness of Township Administration?**

Completely	Nearly Complete	Average Complete	Not Complete

Thanks for your kind cooperation

Signature  
Name

\_\_\_\_\_

\_\_\_\_\_