

**E-SERVICES: A STUDY ON E-GOVERNMENT  
WEBSITES IN MYANMAR**

**In partial fulfillment of the requirements for the degree of MA in  
Governance and Development**

A dissertation submitted by

**AUNG AUNG**

BU ID – 17172014, MAGD 8<sup>th</sup> Batch

**Approved by**

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**Partnership Specialist (Training), Access to Information (a2i) Program**

**Prime Minister's Office, Dhaka**



**BRAC Institute of Governance and Development, BRAC University, Dhaka**

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## **DECLARATION**

I hereby declare that the dissertation entitled “E-Services: A Study on E-Government Websites 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.

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## **ABSTRACT**

A shift from traditional governance to e-governance, websites has become incomparable means for offering public information and services in new ways that can satisfy citizens' needs and convenience. This paper is an attempt to review the e-Services through e-government website in Myanmar from the perspective of citizens' needs and benefits. Existing websites of different ministries and organization of Myanmar have been reviewed to study as what features they carry, what types of information and services they provided, what are the services that citizens wanted to get from e-government website, how the needs and expectations of the citizens can be met with government websites provided services, how to approach people centered services using social media and mobile application.

For the purpose of the study, primary data are collected by using questionnaire survey and interview method. Compare survey result from officials and beneficiaries to know the difference between government provided e-services and citizens expected services. Then the findings from the primary data have been crossed verified with the benchmark of the "UN model of four stages of online service development" to have an assessment of e-services through e-Government website in general and the ministry level and some national level website in Myanmar. The overall level of online service development of Myanmar e-government website is at the "Enhanced Information Services" stage of UN Model.

This study comes up with some recommendations such as single login identity across all government website should be constructed as a National Government Portal, all of government ministries and department should use social media to disseminate information and also government website needed to modify it can be easily seen on smart phone, government provided e-services should compactable with mobile device that can be used independently of temporal and spatial restraints.

## ABBREVIATIONS

ADB	Asian Development Bank
ATM	Automated Teller Machine
BRAC	Bangladesh Rural Advancement Center
CDMA	Code-division Multiple Access
CERN	European Organization for Nuclear Research
CERT	Computer Emergency Response Team
CSIRT	Computer Security Incident Response Team
CIO	Chief Information Officers
CSCs	Computer Service Centers
EGDI	E-Government Development Index
FAQ	Frequently Asked Questions
FY	Fiscal Year
G2B	Government-to-Business
G2C	Government-to-Citizens
G2E	Government-to-Employees
G2G	Government-to-Government
GDP	Gross Domestic Product
GIS	Geographic Information System
HCI	Human Capital Index
ICT	Information and Communication Technology
ISO	Organization for International Standardization
IT	Information Technology
ITO	Input-Transform-Outcome
ITU	International Telecommunication Union
IVR	Interactive Voice Response
LDC	Least Developed Country
MAGD	Master of Arts in Governance and Development
MCEA	Myanmar Computer Enthusiastic Association
MCF	Myanmar Computer Federation
MCIA	Myanmar Computer Industry Association
MCPA	Myanmar Computer Professional Association

mmCERT	Myanmar Computer Emergency Response Team
NGOs	Non Government Organizations
OECD	Organization for Economic Cooperation and Development
OSI	OSI Online Service Index
PC	Personal Computer
PDA	Personal Digital Assistant
RFID	Radio Frequency Identification
RSS	Really Simple Syndication
SMS	Short Message Service
SPSS	Statistical Packages for the Social Sciences
TII	Telecommunication Infrastructure Index
UN	United Nations
URL	Uniform Resource Locator
USN	Ubiquitous Sensor Network
W3C	World Wide Web Consortium
WAP	Wireless Application Protocol
WCAG	Web Content Accessibility Guidelines
WiBro	Wireless Broadband
WWW	World Wide Web

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# Chapter-1

## INTRODUCTION

### 1.1 Background of this Study

One of the basic policies of democratic governance around the world is to reduce the government size, cost and to increase the functionality of government institutions. The target of these kinds of governments can be considered as proper use of information and communication technology (ICT) in government system combined with an organizational change and new skills in order to provide better services for the public.

ICT can concretize e-governance initiatives for enhanced access to and delivery of (mostly web-based) government information and services. E-governance is a potent enabler of administrative performance by effective, transparent, and accountable institutions and it encourages the participation of citizens. E-services in e-government have been used and implemented in most of the countries and its usage continuously increasing.

E-government today allows countries like Myanmar to leapfrog over multiple generations of technology to deliver efficient and cost effective public services to citizens. With this in mind, the government, aiming at the economic development, has included the policy “to establish Data ID Card System, Digital Government Strategy and e-Government system” in the economic policy as a national objective in August, 2016, for the successful implementation of e-Government process. Myanmar government has laid down the Myanmar e-Government Master Plan 2016-2020 and it has been implementing since 2016.

E-Government simply consists of the creation of a website where information about political, economic, social and government issues are presented. Many of the studies and report show that the demand-side of e-governance mostly prefers to use online services for searching and downloading information<sup>1</sup>.The government implementing e-Government processes are considered to be a smart government, a government caring sustainability, a government caring the future generations and so on. Indeed, those who actively use the public services of a government are its citizens.

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<sup>1</sup> S. M. Hoque, (2005) e-Governance in Bangladesh Initiates and Challenges. Ph.D. Dissertation, Institute of Bangladesh Studies, Rajshahi University, Rajshahi, Bangladesh, available online at [www.bwdb.gov.bd/archive/pdf/253.pdf](http://www.bwdb.gov.bd/archive/pdf/253.pdf) p.131.

Myanmar citizen uses the Internet every day for various things. 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>.

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. Moreover it is needed to match the service provided by the government and the service wanted from the citizens. Service delivery can be determined by the difference between the expected service and the perceived service.

## **1.2 Significant of this Study**

Myanmar government established Computer Science Development Council in 1996 and set policies in ICT development activities with the help of the experts from the government departments and external organizations, but Myanmar ICT sector has not significantly improved. In 2013, the government started taking steps to open up the telecommunications market, issuing—licenses to new service providers, and then telecommunication infrastructure has been developed and mobile phone and internet usage has been rapidly grown up. In FY2015-2016, Myanmar telephone in use (per 1000 people) was 952 and internet user (per 1000 people) was 752.

The roll-out of new information and communications technologies (ICT), infrastructure and services in Myanmar is having a transformative impact on the country. The growing availability of smart phone is increasing opportunities for Internet access. It has been estimated that by 2030 the ICT sector could contribute \$6.4 billion to Myanmar's GDP and

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<sup>2</sup> Abodollahi, A et al (2009) 'A Foresight Based Framework for E-government Strategic Planning', *Journal of Software*, 4(6),p.544

employ approximately 240,000 people<sup>3</sup>. So it is time to deliver the government services using the ICT effectively and efficiently to the citizens.

### **1.3 Problem Statement**

The main focus of e-government is to improve the delivery of government services and to create a better government for citizens, business and other governments with the help of ICT and especially the internet. Electronic public service delivery appears to be reaching a critical point where the confluence of citizen demand for greater speed and transparency in service delivery is manifested. In order to realize efficiencies, governments must develop a citizen-centric model that involves key stakeholders outside of government – businesses, trade associations, scientists, academics, and NGOs. Without their input, e-government projects are unlikely to succeed, because citizens will not use a system that does not respond to their needs. Once a consensus has been reached, leaders must fully communicate the vision to the public.

### **1.4 Research Objectives**

This research attempts to identify the relationship between the Myanmar Government and Citizens through the use of information technologies, for implementation of e-governance and factors relating to better service delivery. So, the main objectives of the dissertation are:

1. To find out present status of e-services available in Myanmar through websites.
2. To find out the scopes of enhanced e-services to meet the needs of citizens.
3. To suggest some guideline for government websites to improve the e-government services.

### **1.5 Research Questions**

The basic purpose of this research is to see what kind of services are needed in government websites that the service receiver are wanted and how to address them through reengineering the existing websites. In order to achieve this purpose, the following research questions are formulated.

1. What are the present features and e-services available at e-government website of Myanmar?

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<sup>3</sup> M.Wanchenfeld, et al (2015) *Myanmar ICT Sector-wide Impact Assessment*. Yangon: MCRB,IHRB,DIHR

2. What are the services that citizens wanted to get from the government through e-governance?
3. How the needs and expectations of the citizens can be met with government provided services?
4. How the service delivery system could be improved through reengineering the existing websites?

## **1.6 Scope of the Research**

The present research is an attempt to delineate an understanding on e-services through e-Government websites in Myanmar and based on the understanding, to visualize the initiatives that are undertaken for implementation of government website in Myanmar. For this purpose ( 30 ) National and Ministerial level government websites are reviewed to identify and establish linkages between e-governance standards and citizen satisfaction on the way to better governance those performance are determined by the efficiency of e-service delivery.

There are a lot of other government departments/organizations in Myanmar that already have e-governance initiative of their own; but could not explored into thoroughly because of time and resource constraints.

## **1.7 Research Methodology**

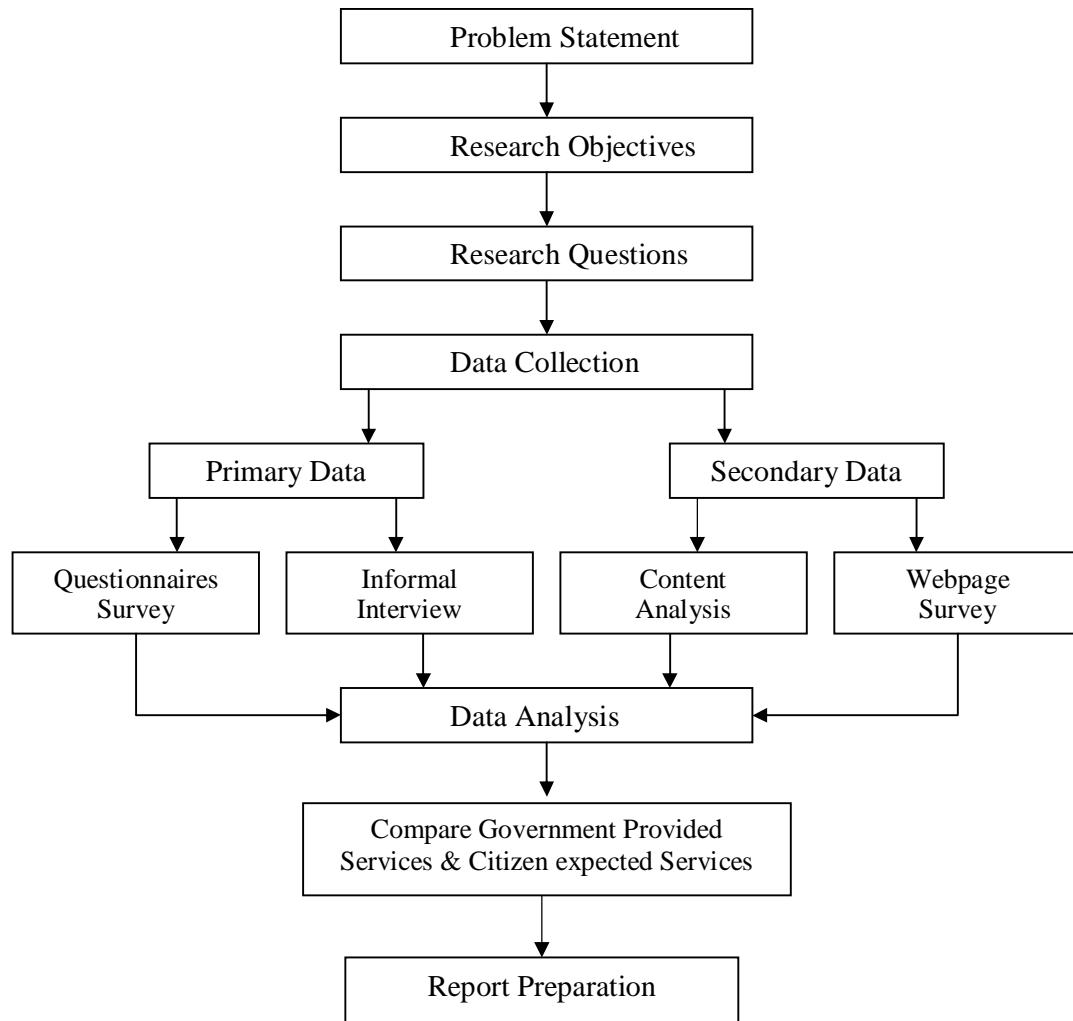
In general, research methodology is the way of achieving the research objectives. It primarily focuses on the methods, tools and techniques of data collection. The instruments for gathering data also fall within the definition of methodology of a research.

## **1.8 Methods**

Assessment of E-governance service delivery 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
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, chatting and face to face interview method. The main objective of the interview method is to collect information about the perception of the citizens or beneficiaries regarding e-services through e-Government website in Myanmar.

### **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 services that provided by the government. To know about the services that citizens they wanted from e-Government website, I interview the citizens who wanted to get services from e-governance.

## **1.9 Sources of Data**

The data have been collected for this study from both primary and secondary sources. Internet was a major source of information and study materials for this research. Web contents, related to the study area, were accessed and collected during the September to November 2017. Appropriate references, with the URL, are provided, where such information or materials are used. Secondary data are also gathered from the existing literatures such as books, newspaper reports, previous research works, reports etc.

Primary data are collected through interview and questionnaire survey. The officers, who are working in ICT related duty, 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 officials, who are working ICT related duty at all the offices in Naypyitaw could not bring under the research work. One of the officials, who are responsible for e-government work from each of the Ministry is choosing the respondents for the purpose of the questionnaire survey and some beneficiaries of these ministries.



## 1.12 Sample Size

A total 60 (sixty) respondents has been selected from the study area.

Table ( 1. 1 ) Composition of the Respondents

<b>Stratum</b>	<b>Number of Respondents</b>
Government Officials	30
Beneficiaries (Citizens)	30
Total	60

This research attempts to identify the relationship between the Myanmar Government and Citizens through the use of information technologies. So the officials who are responsible for e-government works and the citizens/ service seekers are involved in 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 Selection of the Study Area

For purpose of this study, I had chosen Naypyitaw in Myanmar to cover the nearly all of the ministries in Myanmar. All of the ministries and divisions of the government including the President's Office, the State Counselor's Office, the Parliament and the Election Commission are saturated in Naypyitaw. Almost all of the central government officials lives in Naypyitaw, Zabuthiri Township. Moreover most of the business and company branches open at Naypyitaw. Therefore I have selected that area as study area of research.

## 1.16 About Naypyitaw

Naypyitaw is the administrative city and also capital of the Republic of the Union of Myanmar. Centrally located, it is 391 km from Yangon and 302 km from Mandalay, being

easily accessible from all parts of the Union. The city covers an area of 7,054.37 km<sup>2</sup> (2,723.71 sq mi) and has a population of 924,608. Naypyitaw is a Union Territory under the direct administration of the President. Day-to-day functions are carried out on the President's behalf by the Naypyitaw Council led by a Chairperson. Naypyitaw comprise (8) townships viz. Zeyar Thiri, Pohbba Thiri, Uttara Thiri, Zabu Thiri, Dekina Thiri, Pyinmana, Lewe and Tatkone Townships.

### **1.17 Limitations of the Study**

I cannot measure Myanmar e-Government website by performance measure because of time and resource constraints. I will analysis Myanmar e-Government website by taking the survey with some important features of website and customer needs. Then the findings from the primary data have been crossed verified with the benchmark of the “UN model of four stages of online service development”.

The study could not provide a complete picture on the actual requirements of e-services through e-Government websites in Myanmar. However this study’s sample 60 provides an overview of e-services expectations from citizens and e-services provided by Myanmar e-Government websites.

### **1.18 Organization of the Study**

The dissertation is organized into five chapters. These are:

**Chapter One – Introduction:** It intends to present the background of the study, states the research problem and scope of the research. It also specifies the research objectives and focuses on the rationale of the study. This chapter also expresses the methods, source of data, tools and techniques of data collection. It also provides the rationale for selection of site and limitation of the study.

**Chapter Two –Literature Review:** This chapter highlights on the background of E-Government, E-Government Maturity Levels, Classification of e-Government Services, Type of Government E-Service Relationship, Evolving Public Service Delivery, E-Services and Measure, E-Government Website and Their Related Important Features, Quality Criteria for Web Services and Digital Divide.

**Chapter Three – Present Status of Myanmar E-Governance:** This chapter describes E-Government Readiness Assessments of Myanmar, Myanmar ICT Master Plans, E-

Governance Master Plan (2016~2020), Local-Language Readiness, IT Policies and Legal Framework, ICT Institutions and Industry and finally Cyber Security.

**Chapter Four – Research Findings and Discussion:** This chapter presents the survey data and analyses them in accordance with the research objectives and it also presents appropriate arguments with findings.

**Chapter Five – Conclusion and Recommendations:** The final chapter summarizes the whole findings of the study by suggesting some recommendations on the basis of field observations, studying the government website and finally draws recommendations for further research.

## Chapter-2

### LITERATURE REVIEW

#### 2.1 E-Government

There is no standard definition of e-Government. Various academicians and researchers have attempted to define it based on their notion. The e-government Handbook for Developing Countries describes e-government as follows:<sup>4</sup>

E-government is the use of information and communications technologies (ICT) to transform government by making it more accessible, effective and accountable. E-government includes: providing greater access to government information; promoting civic engagement by enabling the public to interact with government officials; making government more accountable by making its operations more transparent and thus reducing the opportunities for corruption; and providing development opportunities, especially benefiting rural and traditionally underserved communities.

E-government is not a tool limited to the richer countries. Indeed, some of the most innovative uses of the Internet in governance are appearing in the developing world, as ICTs are being used to streamline government and connect it more closely with the people it is supposed to serve.

E-government is not a panacea. Although it can facilitate change and create new, more efficient administrative processes, e-government will not solve all problems of corruption and inefficiency, nor will it overcome all barriers to civic engagement. Moreover, e-government does not happen just because a government buys more computers and puts up a website. While online service delivery can be more efficient and less costly than other channels, cost savings and service improvements are not automatic. E-government is a process that requires planning, sustained dedication of resources and political will.

E-government utilizes technology to accomplish reform by fostering transparency, eliminating distance and other divides, and empowering people to participate in the political processes that affect their lives.

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<sup>4</sup> A Project of InfoDev and The Center for Democracy & Technology, *The E-Government Handbook for Developing Countries*, 2002, pp.1-2.

## **2.2 E-Government Maturity Levels**

In the literature there are several models of e-government maturity levels, they show the maturity levels/phases of e-government and e-government services and the requirements and expectations to move from one level to another. The maturity level model is a good starting point for analysis and evaluation of e-government services.

Considering the levels of online activities and web presence, the United Nation's study on e-governance entitled "United Nations E-Government Survey 2010: Leveraging e-government at a time of financial and economic crisis" lists the following four stages of online service development<sup>5</sup>:

### **2.2.1 Stage 1 Emerging Information Services**

Government websites provide information on public policy, governance, laws, regulations, relevant documentation and types of government services provided. They have links to ministries, departments and other branches of government. Citizens are easily able to obtain information on what is new in the national government and ministries and can follow links to archived information.

### **2.2.2 Stage 2 Enhanced Information Services**

Government websites deliver enhanced one-way or simple two-way e-communication between government and citizen, such as downloadable forms for government services and applications. The sites have audio and video capabilities and are multi-lingual. Some limited e-services enable citizens to submit requests for non-electronic forms or personal information, which will be mailed to their house.

### **2.2.3 Stage 3 Transactional Services**

Government websites engage in two-way communication with their citizens, including requesting and receiving inputs on government policies, programmes, regulations, etc. Some form of electronic authentication of the citizen's identity is required to successfully complete the exchange. Government websites process non-financial transactions, e.g. e-voting, downloading and uploading forms, filing taxes online or applying for certificates, licenses and permits. They also handle financial transactions, i.e. where money is transferred on a secure network to government.

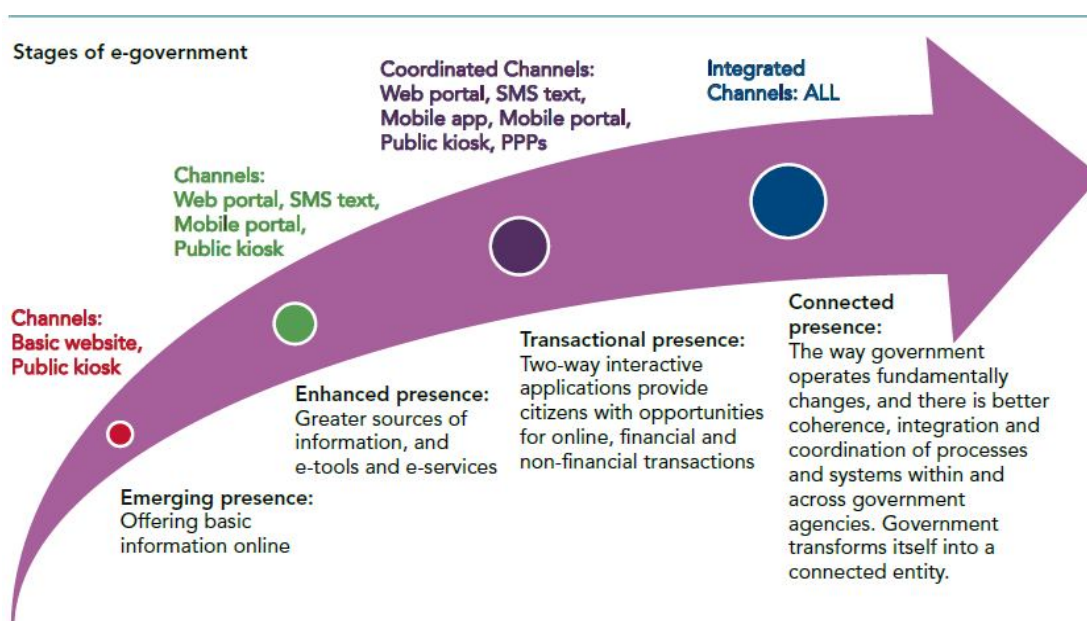
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<sup>5</sup> UN, E-Government Survey 2010, *Leveraging E-Government at a Time of Financial and Economic Crisis*, 2010, p-95

### 2.2.4 Stage 4 Connected Services

Government websites have changed the way governments communicate with their citizens. They are proactive in requesting information and opinions from the citizens using Web 2.0 and other interactive tools. E-services and e-solutions cut across the departments and ministries in a seamless manner. Information, data and knowledge is transferred from government agencies through integrated applications. Governments have moved from a government-centric to a citizen-centric approach, where e-services are targeted to citizens through life cycle events and segmented groups to provide tailor-made services. Governments create an environment that empowers citizens to be more involved with government activities to have a voice in decision-making.

Figure ( 2.1) Channel use for each stage of the UN model of e-government development<sup>6</sup>



Source: UN, E-Government Survey 2014, E-Government for the Future We Want

<sup>6</sup> UN, E-Government Survey 2014, *E-Government for the Future We Want*, 2014, p-113

## **2.3 Classification of E-government Services**

The classification of e-government services is commonly connected to interaction levels. As traditional government offers services to citizens, so e-government provides e-services, like any e-business. The classification of e-government services is commonly connected to interaction levels. Types of e-government services include:<sup>7</sup>

### **2.3.1 Informational**

Informational services are those services that only provide information and that information is presented on the website. This mostly means that the government is present on the web and there is no interaction between the government and citizens. The most important aspects of informational services are content, quality and usability.

### **2.3.2 Interactive**

These services offer some degree of interaction. Although they are called interactive services they are seen as a one-way service and include those services in which the information of the service is more structured, for example documents that are available for download or sites where citizens can enter job applications or submit complaints.

### **2.3.3 Collaborative**

These services are seen as two-way services and support more complex services that help citizens to submit or receive public administration information and documents. For businesses this is of great relevance, especially businesses working with government on projects, public-private partnerships, NGO's, citizens forms etc.

### **2.3.4 Transactional**

Transactional services support online payments and transaction that businesses or citizens can make with the government.

## **2.4 Type of Government E-Service Relationship**

Aside from classification based on interaction levels, another e-government service classification. It is related to the users of e-government services: citizens, businesses, other

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<sup>7</sup> A. Keco, 'Evaluation of e-government Service Quality: The Case of a Local e-government in Bosnia and Herzegovina', Master's Thesis. School of Economics and Business University of Sarajevo and Faculty of Economic, University of Ljubljana, 2014, p.9.

governments, agencies or NGO's. The following e-services show to what extent technologies are a catalyst in assisting governments to transform themselves and move across the transformational stages towards the ultimate goal of connected governance:<sup>8</sup>

1. Government-to-Citizens (G2C) Services
2. Government-to-Government (G2G) Services
3. Government-to-Business (G2B) Services
4. Government-to-Employees (G2E) Services

### **2.4.1 G2C Services**

Government-to-Citizens services enable citizens to interact with government in a way that is responsive to citizen needs and communication preferences. G2C services allow citizens to stay current on government information, ask questions, request services, complete transactions, submit comments, report problems, request emergency assistance and access data. G2C communications is also the active use of popular social media, such as Facebook, Twitter, and YouTube.

G2C services divided into following categories:

1. Informational and Educational Services
2. Interactive Services
3. Transactional Services

#### ***2.4.1.1 Informational and Educational services (Push services)***

This type of G2C service involves distributing information to citizens (*e.g.* related to services, schedules, education, emergencies, regulations and other flat content). The government service is mainly comprised of pushing information through SMS, for example, or making it available on a Web or WAP site. Much of the information is static and there is little interaction with citizens. Most inquiries to government from citizens are for basic service information, and providing push services both enables real-time communications to citizens, and creates cost savings for government.

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<sup>8</sup> OECD/International Telecommunication Union (2011), *M-Government: Mobile Technologies for Responsive Governments and Connected Societies*, OECD Publishing, pp.28-39.



### ***2.4.1.2 Interactive Services***

Through interactive G2C services, citizens can engage in dialogue with governments and send inquiries, problems, comments, or service requests to specific agencies. Citizens also can access forms, applications, and databases. In this stage, the interaction becomes more personalized, detailed and targeted to specific citizen interests and service needs, and specific agency divisions and service areas. The communication becomes one-to-one, rather than one-to-many. The focus is on citizen convenience and increased participation, with citizens choosing to receive specific notifications, such as neighborhood crime reports, exam results or the availability of a special library book. Mapping, location-based services and photo/video capabilities enhance the functionality of SMS and mobile applications. Social media tools build communication networks for breaking news, events and emergencies, with real-time citizen feedback and information sharing.

### ***2.4.1.3 Transactional Services***

With G2C Transactional Services, governments begin to transform themselves by expanding two-way interactions between citizens and government to new levels. In this stage, citizens can complete their transactions with government electronically and at their convenience. This includes self-service options for paying taxes, making payments, lodging tax returns, applying for services and grants, as well as other similar G2C interactions, allowing the citizen to access these services 24/7.

## **2.4.2 G2G services**

With Government-to-Government services, governments transform themselves into a connected entity that more effectively and efficiently responds to the needs of its citizens by developing an integrated back-office infrastructure. Connections can be horizontal connections (among government agencies) and vertical connections (between central and local government agencies).

## **2.4.3 G2B Services**

Government-to-Business services include providing information regarding policies, regulations, forms, and applications related to procurement, licensing, permitting and payment of taxes, as well as support of small and medium enterprises and business development. With considerable value for rural businesses, government agencies are providing support including accessible kiosks and low-cost handsets, digital signature

services, SMS weather and market updates, mobile wallets and maps for transport and tourist sites.

#### **2.4.4 G2E Services**

With Government-to-Employees services, governments provide tools, training, and data access to their employees that not only assist those employees in their daily operations, but also improve organizational efficiencies and accountability, maximize limited resources and enhance the quality of service to citizens. E-services with mobile technologies have substantial impact on improving G2E services, especially for field crews and staff who work in secondary or remote locations, enabling real-time access to enter, retrieve and share data.

### **2.5 Evolving Public Service Delivery**

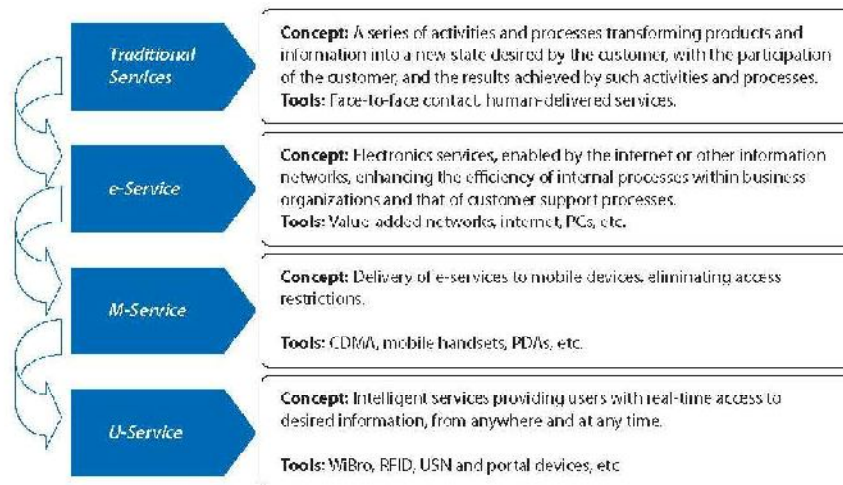
E-government services are increasingly required to be platform independent and constantly available. Therefore, concepts such as mobile government and one-stop shops have gained priority. Figure (2.2) summarizes this evolution, linking the different levels of service concepts and it includes following stages of development:<sup>9</sup>

1. Traditional Service
2. E-Service
3. M-Service
4. U-Service

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<sup>9</sup> OECD/International Telecommunication Union (2011), *M-Government: Mobile Technologies for Responsive Governments and Connected Societies*, OECD Publishing, p.62.

Figure ( 2.2) Development of service concepts



Source: Oui-Suk, Uhm(2010), *Introduction of m.Government &IT Coverage Technology*, KAIST Institute for IT Convergence, found in OECD/International Telecommunication Union (2011), *M-Government: Mobile Technologies for Responsive Governments and Connected Societies*.

### 2.5.1. Traditional Service

Traditional service need series of activities and processes transforming products and information into a new state desired by the customer, with the participation of the customer, and the results achieved by such activities and processes. It also need to contacts face-to-face connection and mainly paper-based service delivered by human.

### 2.5.2. E-Service

E-service is deeds, efforts or performances whose delivery is mediated by information technology (including the Web, information kiosks and mobile devices). Such e-service includes the service element of e-tailing, customer support and service, and service delivery.

In e-service the customer's interaction or contact with the organization is through the technology, such as the web site. During an e-service encounter, customers have to rely entirely on sight and sound, whereas the traditional service experience can use all senses. E-service is sometimes described a relatively impoverished experience, due to the absence of face-to-face interaction, which is seen as central to relationship development. E-service, unlike traditional service, is not constrained by distance and opening hours, and thus delivers convenience.

The two inherent characteristics of e-service that emerge from the technology facilitation and are recurrent themes in the literature, viz the following services:<sup>10</sup>

1. E-service as information service, and
2. E-service as self service.

#### ***2.5.2.1 E-Service as Information Service***

One perspective on e-service is to conceptualize it as information service, since the primary value exchanged between the two parties is information. Indeed, various authors suggest that the common perception of the Internet is that it is used mainly to gratify the need for information

Web-based customer support systems demonstrated a significant relationship between information quality and system effectiveness, indicating that the effectiveness of a web-based customer support system increases as the quality of the information is improved. Increasing the quality of information is seen as contributing to the reduction of uncertainty and risk. This further emphasizes the importance of information in the service experience of Internet users. This perspective on e-service as information service has a number of consequences. Fundamentally it means that both search and information retrieval and the information content of web sites have a role to play in consumer evaluation of service quality. Information quality lies in how information is perceived and used, and consumer expectations play a pivotal role in defining information quality.

#### ***2.5.2.2 E-Service as Self-Service***

Self service is defined as “service in which there is no direct assistance from or interaction with a human service agent”. In self-service operation, a customer has to go to the technology (such as an ATM) to receive a service, whereas in e-service, a customer can receive the service through the Internet at home or in other places.

In e-service customers must learn from the interface, or from more experienced friends and family. Both during the early stages of learning and later, the way that the customer experiences a service may be significantly influenced by customer performance. This could have unpredictable consequences for customer expectations and evaluation of service quality.

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<sup>10</sup> Jennifer Rowley, (2006) "An analysis of the e-service literature: towards a research agenda", Internet Research, Vol. 16 Issue: 3, pp.339-359, <https://doi.org/10.1108/10662240610673736>, (accessed 8 November 2017)

The need for customer engagement and learning, means that organizations need to go beyond good web design and clear instructions and navigation to develop an understanding of the learning processes that they expect of their customers for successful engagement in e-service.

Self-service can be conceptualized as the transference of control to the customers, although the extent to which this is realized may be influenced by the design of the self-service. Different individuals may experience the self-service encounter differently, since their personality may impact on their perceptions of control and locus of control.

### **2.5.3. M-Service (Mobile Services)**

Mobile services can be defined as any kind of service that can be retrieved via a mobile device (cellular phone, personal digital assistant (PDA), or other handheld device) and that is delivered in interaction between an organization and a customer.<sup>11</sup>

Mobile services differ from traditional services in their ability to provide service offerings regardless of temporal and spatial constraints. The benefits of mobile services are often summarized in four factors: ubiquity, convenience, localization and personalization that differentiate mobile services from online services. Mobile services are also different from traditional interpersonal services that are delivered face-to-face, or from other types of e-services, such as wireless online services, where the service delivery is linked to a specific fixed local area network or specific location. Mobile services can be accessed on the move, where and whenever the need arises.<sup>12</sup>

In general, ‘mobile’ means “fully portable, real-time access to the same information, resources, and tools that, until recently, were available only from the desktop”. New technological capabilities permit delivery of content to be delivered through mobile handheld devices with increasing speed, and serve customers without spatial and temporal restrictions. Mobile service content has evolved rapidly from text-based content, such as mobile yellow pages, into multimedia solutions including e.g. games, route guidance, and mobile ticketing,

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<sup>11</sup> Minna Pura. (2017). *Perceived Value of Mobile Service Use and its Consequences*. Available at: [https://www.researchgate.net/publication/50231283\\_Perceived\\_Value\\_of\\_Mobile\\_Service\\_Use\\_and\\_its\\_Consequences](https://www.researchgate.net/publication/50231283_Perceived_Value_of_Mobile_Service_Use_and_its_Consequences) (accessed: 8 November 2017)

<sup>12</sup> Heinonen, Kristina & Pura, Minna. (2013). *Classifying mobile services*, available at: <https://www.researchgate.net/publication/228351366> (accessed: 8 November 2017)

which serve diverse customer needs. Mobile services offer real-time, on-demand access to content, which makes it more valuable to the customers.<sup>13</sup>

#### **2.5.4. U-Service**

The wider meaning of ubiquitous government – “u-government” – services can be interpreted as advanced social infrastructure for future society. Technology is often a few steps ahead of the socio-economic and usability enablers necessary to make the transition. The stakeholders are working in various collaborative contexts to implement the paradigm of “anywhere, anytime, anyhow access to any service by anybody”.

U-government can be viewed as a superset of e-government, which reflects new forms of interaction and transaction that are possible anywhere and at any time on various devices, due to the pervasive availability of networks, applications and services. On the other hand, it should be taken into account that the provision of public services is citizen-centric, and governments must meet the digital divide challenge. Pragmatically, policymakers have to exercise due diligence to assure the availability of government services online and to improve their accessibility and mobility.

### **2.6 E-Services Measure**

It has always been a widely asked question on e-Government performance measurement: what are the best practice, appropriate models, tools and techniques for measuring, monitoring and maximizing the efficiency and effectiveness of the e-Government services?

Public sector performance measures are typically quantitative ways of determining the resources that spend into providing services (input measures), the immediate results of those services (output measures), and the longer-term results of providing those services (outcome measures). Performance measurement can be regarded as measurement on a regular basis of the results (outcomes) and efficiency of services or programs. One may take note that the following list is a classical success performance measures for traditional services provided

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<sup>13</sup> Minna Pura. (2017). *Perceived Value of Mobile Service Use and its Consequences*. Available at: [https://www.researchgate.net/publication/50231283\\_Perceived\\_Value\\_of\\_Mobile\\_Service\\_Use\\_and\\_its\\_Consequences](https://www.researchgate.net/publication/50231283_Perceived_Value_of_Mobile_Service_Use_and_its_Consequences) (accessed: 8 November 2017)

through off-line platforms. These measures however form the basis, from which we can extend for e-services.<sup>14</sup>

### **2.6.1. Input Measures**

It measures the resources put into e-Government efforts such as costs and amount of time associated with staff, development, contractors, and maintenance.

### **2.6.2. Output Measures**

It measures those immediate actions resulting from e- Government efforts such as number of hits, downloads, amount of time users spend on a site, number of transactions completed, dollar amounts processed through each site, and tracking of customer requests/complaints/questions

### **2.6.3. Outcomes Measures**

**Short-Term Outcomes** — outcomes that are expected to lead to a desired end. These outcomes include accessibility of services, accuracy of information provided, adoption rates within specified user groups, ease of use, level of citizen satisfaction, usefulness, number of agencies participating, etc. Most of these outcomes are measured by customer surveys/feedback.

**Long-term outcomes** — the consequences of the program or those “end results that are sought.” These outcomes include cost savings from e-Government, staff time savings from e-Government, and trust in government by citizens as measured by surveys. The outcomes can be more precisely translated into following:

1. Response Time,
2. Adoption Rate,
3. Customer Satisfaction and
4. Efficiency.

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<sup>14</sup> Fong, Simon & Si Meng, Ho. (2009). *A web-based performance monitoring system for e-Government services*, ACM International Conference Proceeding Series. 74-82. 10.1145/1693042.1693058

### ***2.6.3.1 Response Time***

Response time is generally measured as the average amount of waiting time required to complete consulting a customer service representative; time taken to complete a transaction; clicks and latency spent to achieve a specific task.

### ***2.6.3.2 Adoption Rate***

Adoption rate is a prime performance indicator for measuring e-service. E-Government management considers an e-service successful by measuring its adoption rate. The adoption rate is the percentage of people using the e-service versus the total amount of people that use a particular government service from all service delivery methods. Other e-service success factors include revenue generated versus total production and maintenance costs, awards or national recognition, and citizen or business compliments. Adoption rate is calculated by dividing the number of users or transactions completed online by the total number of customers that were served in all platforms or by other means, for a given time period.

### ***2.6.3.3 Customer Satisfaction***

Customer satisfaction is the level of satisfaction with the service by the end user. Another aspect to customer satisfaction is whether there is an increase in customer service because of the e- Government service, such as the customer being able to interact 7 days a week, 24 hours a day. Customer satisfaction is something that can be benchmarked and then trends tracked through time, although the most direct measure is by questionnaire survey.

### ***2.6.3.4 Efficiency***

Efficiency is the unit-cost ratio that is the relationship between the amount of input and the amount of output or outcome of a service. Examples are the cost of providing each service per user electronically compared to traditional methods. Efficiency is also often looked at on a cost per transaction basis. Efficiency can come in the form of improved data entry accuracy when a customer is the one entering their information into a database instead of a third party entering the data for them. If data errors are tracked, then the number of errors from the traditional service delivery can be compared to the electronic service delivery.

These are the general criteria for measurement of E-services, but I cannot measure Myanmar e-Government website by these criteria because of time and resource constraints. I



will analysis Myanmar e-Government website by taking the survey with some important features of website and customer needs.

## **2.7 E-Government Website**

A website is a set of related web pages containing content such as text, images, video, audio, etc. A website is hosted on at least one web server, accessible via a network such as the Internet or a private local area network through an Internet address known as a Uniform Resource Locator. All publicly accessible websites collectively constitute the World Wide Web. The World Wide Web (WWW) was created in 1990 by CERN physicist Tim Berners-Lee. On 30 April 1993, CERN announced that the World Wide Web would be free to use for anyone.<sup>15</sup>

The ICT in particular the Internet has become prominent and has the potential to change fundamentally how organizations work. Internet provides an opportunity for governments to offer services to their citizens via websites. Government websites provide a platform for efficient communication and access to public information. They are a useful tool to transparency and democracy because they enable citizens to easily interact with their governments.

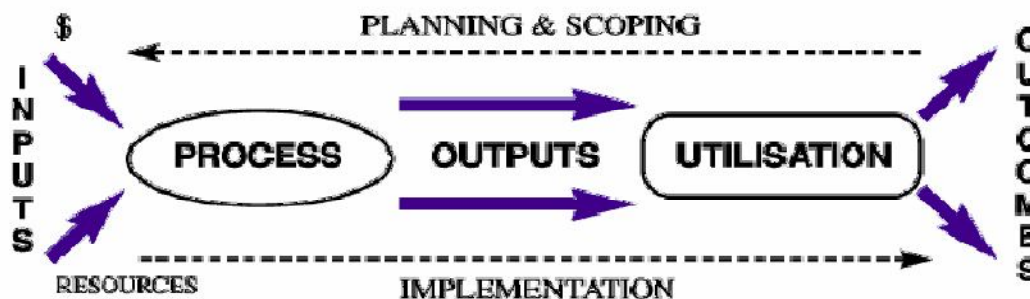
## **2.8 Planning of Government Website**

Firstly planning of government website should consider what types of services to be provided and then implement the website with available resources. It should be consider planning and implementing with the Input-Transform-Outcome (ITO) Model.

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<sup>15</sup> S.M. Hoque, (2017), GOV 613: E-Governance and IT [lecture handout]. From an E-Government Website Lecture, BRAC University

Figure ( 2.3 ) John Smyrk's Input-Transform-Outcome (ITO) Model Diagram



Source: *E-Government Project Management*<sup>16</sup>

Designing government websites, such as e-government portals, require planning. Planning includes, for example, selection of partners for service delivery and identifying various channels for service delivery. Planning creates a clear understanding and realization of users' needs. Website development and management also requires strategic planning due to organization changes. Considerations in planning of government websites include:<sup>17</sup>

1. Defining the purpose of the website, that is, what the website will be used for.
2. Identifying the intended audience, their cultural backgrounds, usability skills and interest.
3. Checking for resources availability. Identifying the available resources to manage government websites is crucial in planning. Required resources include human resources, that is, people who would maintain the website, and web hosting services which may be outsourced or hosted in-house. Resources planning leads to sustainability.
4. Plans for updates. Planning of government websites should provide guidance on how often the websites should be updated so that users are provided with up-to-date information.

On the technical side, the plan should entail the technologies to be used, security and error handling measures to be applied before the website is built. Without careful planning, technologies that promise development and progress fall short of their promises and yield to

<sup>16</sup> S.M. Hoque, (2017), GOV 613: E-Governance and IT [lecture handout]. From an *E-Government Project Management* Lecture, BRAC University.

<sup>17</sup> E.N Asimwe and N. Lim, 'Usability of Government Websites in Uganda' *Electronic Journal of e-Government*, vol.8,no.1,2010, p.9.

problems such as lack of access to the means of communication. It is common and normal that government agencies share resources such as information. Yet sharing of information requires interoperability of systems and applications. Therefore, using compatible technologies in website development can help government agencies overcome interoperability problems.

## 2.9 Implementation of Government Website

Implementation of government websites can be classified into four phases, namely:<sup>18</sup>

1. Website creation,
2. Initial two-way interaction,
3. Online transactions and
4. Comprehensive government portals.

The first phase involves development of government websites to provide information to citizens. The second phase focuses on building a platform for interaction between citizens and the government. Tools such as electronic submission forms and discussion forums are created at this phase. The third phase aims at creating web tools for facilitating transactions of government services, such as electronic procurement. The last phase involves integration of government systems to share resources. Usability issues of government websites are particularly relevant to phases one and two of the implementation of government websites.

## 2.10 Important Features of Websites

E-Government website should have the following important features:<sup>19</sup>

### 2.10.1 Interactive calendars

Help visitors stay informed with up-to-date calendars for local events, meetings, and activities. Searchable calendars that automatically remove outdated information are ideal.

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<sup>18</sup> E.N Asimwe and N. Lim, 'Usability of Government Websites in Uganda' *Electronic Journal of e-Government*, vol.8,no.1,2010, pp.1-12.

<sup>19</sup> S.M. Hoque, (2017), GOV 613: E-Governance and IT [lecture handout]. From a E-Government Website Lecture, BRAC University.

### **2.10.2 Site search**

Extend your site's usability by allowing users to skip directly to the information they need. Search tools allow users to locate information anywhere on the site by searching for keywords in all pages and documents within a website without browsing through webpage.

### **2.10.3 Online Forms**

Eliminate need for printing and mailing forms and cut down on visits to offices by enabling citizens to access forms and applications online. Integrate online payments where possible to allow users to complete the entire process online 24/7.

### **2.10.4 Surveys**

Obtain valuable feedback with online surveys and polls. For quick, inexpensive information gathering, integrated online surveys are an invaluable tool.

### **2.10.5 Unique design**

Website should be as unique as the community. Use website as an opportunity to convey community's sense of place and character. The look and feel of website plays a vital role in promoting tourism as well as economic development and growth.

### **2.10.6 E-mail alerts**

Keep citizen well-informed with automatic email alerts. Ideally users can subscribe to specific areas of interest and modify those settings online 24/7. Help citizens stay informed about upcoming meetings, events, news and more by providing automated daily email notifications. Site visitors subscribe to select categories of alert system and automatically receive email notices when items have been added to those pages.

### **2.10.7 Intuitive navigation**

Government websites by definition are vast information repositories. Help users locate information quickly by defining an intuitive navigation system that directs visitors through logical information patterns. Categorizing information through multiple paths helps visitors locate information even when they are unfamiliar with the specific roles and objectives of various departments.

### **2.10.8 Consistent layout**

Present a unified look and consistent image with a universal layout that runs through the site. Besides uniting various departments and divisions, a consistent layout helps visitors navigate the site by presenting common elements in the same place on each page.

### **2.10.9 Easy access**

Provide quick access to frequently requested information in the header and footer of each page. These pages provide useful information to users when the users need help. Frequently Asked Questions (FAQ) are based on the common queries raised by users.

### **2.10.10 Front page information center**

Homepage is the perfect place for a quick glance at the latest news, events, and items community interest. While not to overload visitors, it is expected that home page will contain current news, upcoming calendar items, and direct links to some of the site's information hotspots.

### **2.10.11 Mobile Site**

When citizens and visitors access website via a mobile device, they expect a fully-functioning, easy-to-use page to appear. Website should include a fully automated mobile system that detects mobile users and reformats website content for easy viewing on smart phones and other handheld devices.<sup>20</sup>

### **2.10.12 Sync with Social Media**

Social media websites like Twitter and Facebook add a whole new dimension to online communication plan allowing reaching internet users that may not otherwise visit official website. Providing up-to-date information on these social media websites can be an expensive, time-consuming task. But with synchronous with social media, it's just one more benefit of automated communication system.<sup>21</sup>

Whether posting news items on home page, bid solicitations in procurement center, or announcing a public meeting on the calendar, website allows posting the information one

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<sup>20</sup> *Municipal CMS*, [Website], 2017, <https://www.municipalcms.com/pView.aspx?id=1456&catid=21> , (accessed 7 October 2017).

<sup>21</sup> *Municipal CMS*, [Website], 2017, <https://www.municipalcms.com/pview.aspx?id=1459&catID=21>, (accessed 7 October 2017).

time and has that information automatically post to the Twitter and Facebook pages. Information also goes out via automated e-notifications, insuring that citizens can stay abreast of the latest news and information no matter what their communication preferences may be.<sup>22</sup>

### **2.10.13 Audio content**

Audio content refers to presentation of web content in form of voice. This feature is highly recommended by international usability and accessibility guidelines such as WCAG to facilitate vision-impaired users.

### **2.10.14 Main menu and other links**

Links connect web pages and documents within the website to each other and to other external websites. Links should not be broken and should have names that correspond to the linked information.

### **2.10.15 Really Simple Syndication (RSS)**

RSS is a method by which web content can be easily and quickly distributed when from a web site or web log. This feed automatically sends out a list of headlines, update notices, and sometimes content to a wide number of people.<sup>23</sup>

## **2.11 Successful Government Website Checklist**

Successful government websites accomplish many things. The following are the guidelines for government website lives up to the citizens' expectations.<sup>24</sup>

- Identified as official website
- Contains current information
- Organized for intended citizen audience
  - Content written for citizens
  - Employee information is stored elsewhere
- Content is accessible to all users regardless of disabilities

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<sup>22</sup> *Municipal CMS*, [Website], 2017, <https://www.municipalcms.com/pview.aspx?id=1459&catID=21>, (accessed 7 October 2017).

<sup>23</sup> *UN E-Government Knowledge Database*, [website], <https://publicadministration.un.org/egovkb/Resources/Glossary> (accessed November 19, 2017)

<sup>24</sup> *Municipal CMS*, [Website], 2017, <https://www.municipalcms.com/pView.aspx?id=1432&catid=23>, (accessed 7 October 2017).

- Uses plain, non-technical language
- Provides links to helper applications for all files provide (i.e. links to download Adobe Acrobat Reader for PDFs, Word Viewer for Microsoft docs, etc.)
- Maintains consistent navigation
- Maintains a consistent, cohesive graphical theme
- Provides a search box on every page
- Provides link back to the homepage
- Provides feedback opportunities for citizens
- Provides easy access to public documents
- Enables online filing of applications, forms, etc.
- Maintains an up-to-date calendar
- Provides extended communication opportunities via email alerts, etc.
- Has developed and follows website standards

## **2.12 Blunders that Undermine Website**

Website visitors have certain expectations when they arrive at e-government websites. Violating these basic expectations can spell disaster or at the very least undermine the government websites. Government website should always avoid following blunders:<sup>25</sup>

### **2.12.1 Underlining words that are not links**

Internet users expect all underlined words to be hyperlinks. Never underline anything on your website unless it is a link.

### **2.12.2 Blinking and scrolling text**

In the early days of the internet, blinking and scrolling text were fascinating features. Today, these features are not only distracting and unprofessional.

### **2.12.3 Out of date calendars**

With so many online calendar options, there is no excuse for out-of-date calendars. Whether website calendar shows yesterday's events or events from three years ago, visitors will instantly wonder how out-of-date the rest of the information on website is.

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<sup>25</sup> *Municipal CMS*, [Website], 2017, <https://www.municipalcms.com/pView.aspx?id=1431&catid=23>, (accessed 7 October 2017).

### 2.12.4 Pages under construction

If website hasn't built a page, do not publish links to it. Good information goes a long way with website visitors. Good intentions do not. Post pages only when they are ready to be seen by the public.

## 2.13 Quality Criteria for Web Services

An important aspect in evaluating e-government services is the quality of the government website itself. In e-services the website is a very important starting point, because the website itself represents the place where all of the interaction happens, people get information, search for information and make requests. The website itself is the first impression of the organization and its design and user-friendliness will depend greatly on citizen satisfaction and confidence<sup>26</sup>. The website design plays an important role for e-government users because it is the interface for connecting the users and the government.

### 2.13.1 Web Usability

Website usability or web usability is vital to both private and public organizations because unusable website reduce the effectiveness of communication between users and the organizations. Web usability generally means that websites are clear, simple, consistent and easy for users to use.

The ultimate objective of website usability is to create a website that is more enjoyable and efficient in the user's experience, compared to another similar website. Website usability can be defined by five elements, namely: It must be simple to learn, be efficient to use, be remembered easily, have a small number of errors and be an enjoyment to use.<sup>27</sup>

Website usability has also been a problem for e-government development. Although international guidelines on webpage development are provided by World Wide Web Consortium (W3C, 2009) to help website administrators develop usable websites, these guidelines are not often followed.

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<sup>26</sup> Nađa Kečo (2014) Evaluation of E-Government Service Quality: The Case of A Local E-Government In Bosnia And Herzegovina. Master Thesis, School of Economics and Business, University of Sarajevo and Faculty Of Economics, University Of Ljubljana, p.31.

<sup>27</sup> Z.T.Shasha and M.Weideman, *Usability Measurement of Web-based Hotel Reservation Systems* Available at: [http://digitalknowledge.cput.ac.za/xmlui/bitstream/handle/11189/5429/203013239\\_Shasha\\_ZT\\_Mtech\\_BIS\\_BUS\\_2016.pdf?sequence=1&isAllowed=y](http://digitalknowledge.cput.ac.za/xmlui/bitstream/handle/11189/5429/203013239_Shasha_ZT_Mtech_BIS_BUS_2016.pdf?sequence=1&isAllowed=y) (Downloaded: 15<sup>th</sup> October 2017).



Government websites that are usable can help improve the relationship between government and citizens through communication and sharing of ideas. They also decrease training, support and maintenance costs, increase user satisfaction, improve government services accessibility and enhance productivity.

### 2.13.2 Accessibility

The E-Government is critically dependent on the accessibility of its integral websites. If the website is not accessible to the intended target users it will not be successful. Web accessibility refers to the degree to which web information is accessible to all human beings and automatic tools.<sup>28</sup>

Web accessibility and usability affect effectiveness and efficiency of web usage and improve user satisfaction. The primary focus of accessibility is access by people with disabilities while usability focuses on the elements of learnability, memorability, effectiveness, efficiency and satisfaction for all website users. Usability aims at satisfying the users - a reason why users' cultural contexts are considered when designing usable websites. All in all "accessibility is a subset of a more general pursuit: usability" because websites may be technically accessible but hard to use. Since accessibility is a subset of usability, usability represents an important aspect in the development of government websites.<sup>29</sup>

Despite the importance of government websites in government-citizen relationship, many government websites are seldom used, especially not by people with disabilities. Around 10% of the world population lives with disability problems and many more have functional impairments which limit their capability to use.<sup>30</sup> These situations are particularly frequent among senior citizens. In order to avoid the creation of new forms of digital exclusion, it is therefore indispensable to adopt solutions that ensure that all users have equal access to e-government services.

Most websites today are more used by people without disabilities than those with disabilities. Because accessibility is an element of web usability, accessibility problem of government websites therefore reduce their usability and this in turn hampers the role of government websites which is would-play in delivering services to citizens.

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<sup>28</sup> S.M. Hoque, (2017), GOV 613: E-Governance and IT [lecture handout]. From a E-Government Website Lecture, BRAC University.

<sup>29</sup> E.N Asimwe and N. Lim, 'Usability of Government Websites in Uganda' *Electronic Journal of e-Government*, vol.8,no.1,2010, pp.2-3.

<sup>30</sup> OECD/International Telecommunication Union (2011), *M-Government: Mobile Technologies for Responsive Governments and Connected Societies*, OECD Publishing, p.97.

Important categories of impairments addressed by solutions that ensure accessibility include: vision, speech, hearing, dexterity and cognitive impairments. Digital illiteracy, while not classified as a disability, is an important factor in many countries which hinders e-government accessibility. This can be tackled with solutions such as text to speech, screen readers, voice recognition and pictures interfaces, which may be applied to vision or cognitive impairments.<sup>31</sup> Not only e-Government website need to meet accessibility but also to get information every time (Availability).

### 2.13.3 Availability

E-Government transactions have to be available 24 hours a day, 7 days a week. An E-Government website needs to satisfy this “high availability” requirement. Anyone using any kind of web browsing technology must be able to visit any site and get a full and complete understanding of the information as well as have the full and complete ability to interact with the site if that is necessary.<sup>32</sup> Website features also needs such as privacy policies and user terms and conditions build trust among citizens

### 2.13.4 Legal Policies

Legal policies on government websites establish a positive image of the websites and enhance citizens’ trust of the websites. Privacy policies include security and they protect confidentiality of user information. Online crimes are common these days. Therefore, it is important to have legal policies to ease the worries of users. The government website should have the following legal policies:<sup>33</sup>

**Privacy policies:** Privacy refers to the right of a user over certain information. Privacy policies guarantee users ownership over information they are entitled to.

**Terms and conditions of use:** These are protocols that govern how information should be accessed and used on the website and how services offered by the website are carried out.

**Copyright/disclaimer information:** Copyright and disclaimer are legal notifications that proclaim the organization as the rightful owner of the website.

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<sup>31</sup> OECD/International Telecommunication Union (2011), *M-Government: Mobile Technologies for Responsive Governments and Connected Societies*, OECD Publishing, p.97.

<sup>32</sup> S.M. Hoque, (2017), GOV 613: E-Governance and IT [lecture handout]. From a E-Government Website Lecture, BRAC University.

<sup>33</sup> E.N Asimwe and N. Lim, ‘Usability of Government Websites in Uganda’ *Electronic Journal of e-Government*, vol.8,no.1, 2010, p.5.

## 2.14 Digital Divide

The digital divide is the gap between people who have access to the Internet and those who do not. Those without access cannot learn essential computer skills, cannot access information that can provide economic opportunities, and cannot share in the benefits of e-government<sup>34</sup>.

Concept of the digital divide is based on the hypothesis that there are both "information-haves" and "information-have-nots" and that the basis for that division may include any or all of such demographic characteristics as age, gender, income, education, ethnicity, region, and locality<sup>35</sup>.

According to the ITU Report 2013 on Measuring the Information Society, “the digital divide refers to the gap among individuals, households and businesses at different socio-economic levels with regard to both their opportunities to access ICTs, and their uses of the Internet for a wide variety of activities. It also refers to disparities among different geographic areas. The digital divide includes imbalances both in physical access to technology, as well as in the resources and skills needed to effectively uses of such technology. A knowledge divide reflects the access of various social groupings to information and knowledge, typically by gender, income, race and location”.

We can identify three commonly used approaches to the digital divide, such as-<sup>36</sup>

1. Access divide;
2. Multi-dimensional digital divide and
3. Multi perspective digital divide.

### 2.14.1 Access Divide

The “access divide” focuses on the division between individuals and groups that do or do not have access to technologies, simplifying therefore the divide as a gap that exists solely as a technological problem. Based on this technological determination, information technologies can solve social, political, economic and organizational problems. Therefore

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<sup>34</sup> A Project of InfoDev and The Center for Democracy & Technology, The E-Government Handbook for Developing Countries, 2002, p.13.

<sup>35</sup> S. M. Hoque, (2005) e-Governance in Bangladesh Initiates and Challenges. Ph.D. Dissertation, Institute of Bangladesh Studies, Rajshahi University, Rajshahi, Bangladesh, available online at [www.bwdb.gov.bd/archive/pdf/253.pdf](http://www.bwdb.gov.bd/archive/pdf/253.pdf) p.132.

<sup>36</sup> UN E-Government Survey 2016, E-Government in Support of Sustainable Development, pp.96-97.

ICTs have the potential to improve government actions (e-government) and to eliminate the digital divide.

### **2.14.2 Multi-Dimensional Digital Divide**

The ‘multi-dimensional’ digital divide implies that the digital divide is not just about access, but more about other social, political, educational and economic issues. The digital divide as a mirror of social inequality: as a global divide, as a social divide and as a democratic divide.

### **2.14.3 Multi-Perspective Digital Divide**

The ‘multi-perspective digital divide’ builds upon the “multi-dimensional digital divide” and focuses on the interrelationships of technology with race, gender and culture. The intersection between an individual’s race, gender, and culture affects the use of digital technology. There are other factors as well, such as age. Public sector intervention is needed to address the perspective and challenges of each group in closing the digital divide over time.

### **2.14.4 Mobile Devices and the Digital Divide**

Mobile devices’ lower costs and ease of use are removing barriers and empowering citizens to quickly and efficiently connect to government for health, education, employment, public safety, financial, transportation, legal and other services.<sup>37</sup>

Part of creating a positive user experience is enabling users to access sites in the ways they prefer to or are set up to access them, and a growing body of users employ cell phones to access websites. Lack of mobile access is a problem not only for urban, affluent users, but also for users affected by the digital divide<sup>38</sup>.

With an increasing percentage of people accessing the web via mobile devices, it is important that governments at all levels ensure that users can access e-government information on these devices.

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<sup>37</sup> OECD/International Telecommunication Union (2011), *M-Government: Mobile Technologies for Responsive Governments and Connected Societies*, OECD Publishing.

<sup>38</sup> Norman E. Youngblood and Susan A. Youngblood (2013) ‘User Experience and Accessibility: An Analysis of County Web Portals’, *Journal of Usability Studies-JUS*, vol. 9,no.1, pp.25-41.

### 2.14.5 E-Literacy

Even in areas where access to technological infrastructure is nearly ubiquitous, there are still marginalized groups who are unable to make use of information and communication technologies because they are not ‘e-literate.’ E-government programs will have to take special steps to include people who are not e-literate<sup>39</sup>.

During usability groups with rural women, we had to convince them that they need smart phones to learn about their rights, to access information, that these things are valuable to them. They didn’t know the advantages of accessing the internet— mostly they had heard about the negative impacts.<sup>40</sup>

Overall, the digital divide persists among nations and regions and between men and women, younger and older generations, educated and less educated people, and people of various groups of the population.

### 2.14.6 Bridging Digital Divide

Mobile government services provide more citizens can access because of the penetration of wireless technology among citizens, its social acceptability, its user friendliness, and its cost, compared with the PC-based Internet wireless technology, it may be a significant way to reduce the impact of the digital divide.<sup>41</sup>

To bridge the divides in terms of capabilities at the individual, government and enterprise levels, ICT usage and other complementary skills are needed. Policy actions include creating alternate spaces for learning, involving community centers, creating better metrics of ICT usage, making efficient use of digital platforms, engaging in continuous experimentation, exploring strategic collaborations, popularizing open government data models, developing comprehensive citizen engagement strategy, and adopting participatory e-governance models for the ‘shared economy.’<sup>42</sup>

Efforts are also needed to provide improved online services targeted to specific vulnerable groups, as well as by offering user-friendly features and language content that help

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<sup>39</sup> A Project of InfoDev and The Center for Democracy & Technology, *The E-Government Handbook for Developing Countries*, 2002, p.13.

<sup>40</sup> S. Scott (2017) *Ending the Gender Digital Divide in Myanmar: A Problem-driven Political Economy Assessment*. Washington, DC: IREX.

<sup>41</sup> OECD/International Telecommunication Union (2011), *M-Government: Mobile Technologies for Responsive Governments and Connected Societies*, OECD Publishing.

<sup>42</sup> UN E-Government Survey 2016, E-Government in Support of Sustainable Development, pp.96-97.

promote inclusion. In addition to developing infrastructure and access to the Internet, improvements in basic services targeted to vulnerable groups have led to more inclusive public services at the national level and have contributed to efforts to bridge the digital divide.

## Chapter-3

### PRESENT STATUS OF MYANMAR E-GOVERNANCE

The Republic of the Union of Myanmar has opportunities to be developed in leaps and bounds by the effective management of geographical dispersion and varying socio-economic conditions, via the use of e-Government system.

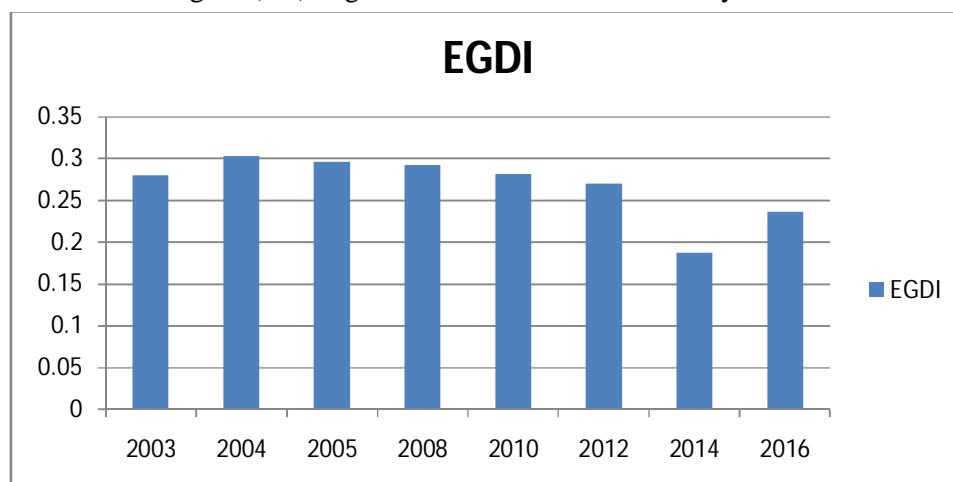
#### 3.1 E-Government Readiness Assessment of Myanmar

E-Readiness of a country refers to the ability to use information and communication technologies to develop one's economy and to foster one's welfare. E-Government Readiness Assessment is a vital step in developing effective e-government. Readiness Assessment provides important knowledge to policy and decision-makers for e-government strategic planning and implementation.<sup>43</sup>

##### 3.1.1 E-Government Development Index (EGDI)

The EGDI presents the state of E-Government Development of the United Nations Member States. Along with an assessment of the website development patterns in a country, the EGDI incorporates the access characteristics, such as the infrastructure and educational levels, to reflect how a country is using information technologies to promote access and inclusion of its people. The EGDI is a composite measure of three important dimensions of e-government, namely: provision of online services, telecommunication connectivity and human capacity.<sup>44</sup>

Figure (3.1) E-government Trend Index for Myanmar



<sup>43</sup> S.M. Hoque, (2017), GOV 613: E-Governance and IT [lecture handout]. From a E-Government Readiness Lecture, BRAC University.

<sup>44</sup> UN E-Government Knowledge Database, [website], <https://publicadministration.un.org/egovkb/About/Overview/-E-Government>, (accessed 19 November 2017).

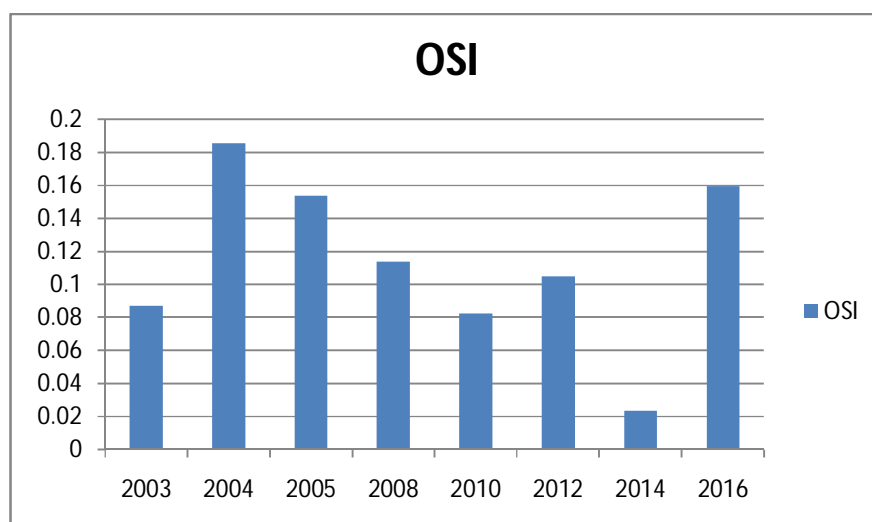
Source: United Nations E-government Database, Myanmar Index

In the UN E-government Database, Myanmar e-Government data were found from 2003 and Figure (3.1) shows the Myanmar e-government index. There has been gradually decreased in e-government in Myanmar from 2004. It rapidly decreased from 0.27033 in 2012 to 0.18694 in 2014 and reached to low state. It is important to note that it is increased up to 0.23619 in 2016 but it remain in low state less than 0.25<sup>45</sup>. World average EGDI value is 0.4992 in 2016. Average value of LDC countries EGDI is 0.2350 and max is 0.3799 in 2016<sup>46</sup>.

### 3.1.1.1 Online Service Index (OSI)

Figure (3.2) shows OSI of Myanmar. There has been gradually decreased in OSI from 2004 and it is rapidly decreased from 0.10457 in 2012 to 0.02362 in 2014. It is important to note that it is increased up to 0.15942 in 2016 but it remain in low state less than 0.25.<sup>47</sup> Average value of OSI of LDC countries is 0.2030 and max is 0.6232 in 2016.

Figure (3.2) OSI of Myanmar



### 3.1.1.2 Telecommunications Infrastructure Index (TII)

The TII is an arithmetic average composite of five indicators: estimated internet users per 100 inhabitants; number of main fixed telephone lines per 100 inhabitants; number of

<sup>45</sup> Very high EGDI (>0.75), High EGDI (0.5 to 0.75), Middle EGDI (0.25 to 0.5), Low EGDI (<0.25).

<sup>46</sup> UN E-Government Survey 2016, *E-Government in Support of Sustainable Development*, 2016, p.117.

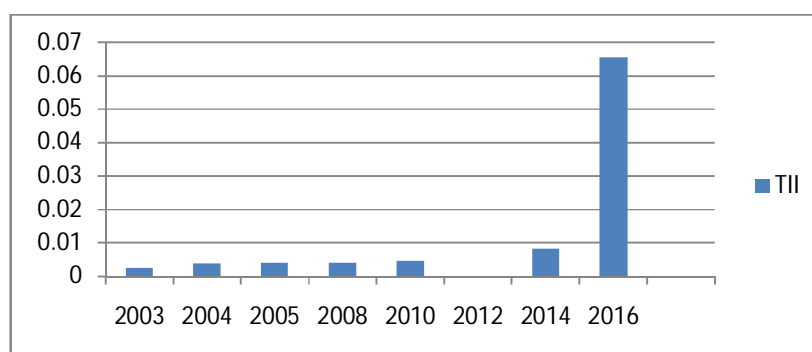
<sup>47</sup> Very high OSI (>0.75), High OSI (0.5 to 0.75), Middle OSI (0.25 to 0.5), Low OSI (<0.25).



mobile subscribers per 100 inhabitants; number of wireless broadband subscriptions per 100 inhabitants; and number of fixed broadband subscriptions per 100 inhabitants.<sup>48</sup>

Telecommunications Infrastructure Index (TII) of Myanmar is described in Figure (3.3). The very low score (zero in 2012) of the telecommunications infrastructure index indicates that computers, the internet, and e-mail are hardly used and not integrated in government business processes. It is important to note that it is increased up to 0.06551 in 2016 from 0.00836 in 2014 but it remain in low state less than 0.25.<sup>49</sup> Average value of TII in LDC countries is 0.1145 and max is 0.2486 in 2016.

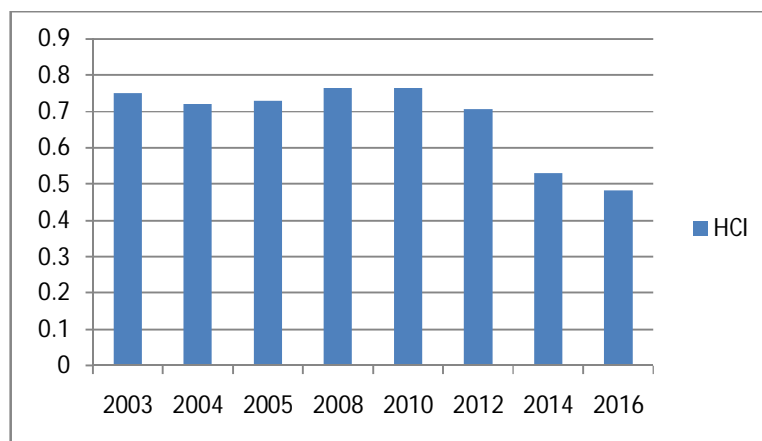
Figure (3.3) Telecommunication Infrastructure Index of Myanmar



### 3.1.1.3 Human Capital Index (HCI)

The HCI consists of four components, namely: adult literacy rate; the combined primary, secondary and tertiary gross enrolment ratio; expected years of schooling; and average years of schooling.<sup>50</sup>

Figure (3.4) Human Capital Index of Myanmar



<sup>48</sup> UN E-Government Survey 2016, *E-Government in Support of Sustainable Development*, 2016, p.134.

<sup>49</sup> Very high TII (>0.75), High TII (0.5 to 0.75), Middle TII(0.25 to 0.5), Low TII (<0.25).

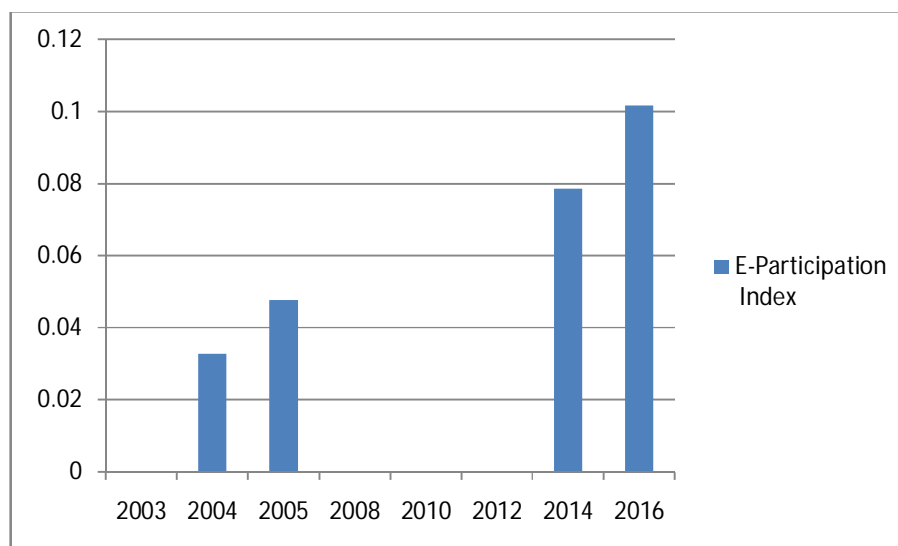
<sup>50</sup> UN E-Government Survey 2016, *E-Government in Support of Sustainable Development*, 2016, p.136.

Figure (3.4) describes HCI of Myanmar and it is relatively accessible and high in year 2003 to 2014 and it remains in between 0.5 to 0.75. Although other components of EGDI is increase in year 2014 to 2016, HCI is decrease from 0.5288 in 2014 to 0.48365 in 2016 and it reached to middle state.<sup>51</sup> Average value of HCI in LDC countries is 0.3875 and max is 0.6651 in 2016.

### 3.1.2 E-Participation

Promoting participation of the citizenry is the cornerstone of socially inclusive governance. The goal of e-participation initiatives should be to improve the citizen's access to information and public services; and promote participation in public decision-making which impacts the well-being of society, in general, and the individual, in particular. It extends the dimension of the Survey by focusing on the use of online services to facilitate provision of information by governments to citizens (“e-information sharing”), interaction with stakeholders (“e-consultation”), and engagement in decision-making processes (“e-decision making”).<sup>52</sup>

Figure (3.5) E-Participation Index of Myanmar



In Myanmar, as describe in Figure (3.5), e-participation index is zero in 2003, 2008, 2010 and 2012. It indicates that there is no online participation between citizens and the government (which translates to a zero e-participation index). And the web presence of the

<sup>51</sup> Very high HCI (>0.75), High HCI (0.5 to 0.75), Middle HCI(0.25 to 0.5), Low HCI (<0.25).

<sup>52</sup> UN E-Government Knowledge Database,[website],

<https://publicadministration.un.org/egovkb/About/Overview/E-Participation> (accessed 19 November 2017).

government is limited to static information, such as links to regional and departmental agencies, or public documents, such as messages of heads of state and departments.

### 3.1.3 Myanmar E-Government Rank

Table (3.1) shows Myanmar's E-Government Rank, E-Government Development index and its components trend from 2003 up to 2016. The information in Table ( 3.1 ) is taken from United Nations e-Government Database and has been adjusted to this form. On the United Nations Member States e-government rank, which consists of 193 states, Myanmar is ranked in 169<sup>th</sup> place in 2016.

Table ( 3. 1 ) E-Government Rank, EGDI and Its Components

Year	EGDI	OSI	TII	HDI	E-Participation Index	E-Government Rank
2003	0.27996	0.08733	0.00256	0.75	0	126
2004	0.30305	0.18532	0.00382	0.72	0.03278	123
2005	0.29593	0.15384	0.00395	0.73	0.04761	129
2008	0.2922	0.11371	0.00388	0.76436	0	144
2010	0.28177	0.08253	0.00449	0.76433	0	141
2012	0.27033	0.10457	0	0.70642	0	160
2014	0.18694	0.02362	0.00836	0.5288	0.07843	175
2016	0.23619	0.15942	0.06551	0.48365	0.10169	169

*Source: United Nations E-government Database, Myanmar Index*

Table (3.2) shows a comparison of the average World, Asia and Myanmar e-government related indexes. Myanmar EGDI and related indexes are very low state, and only HCI, 0.48365 can comparable with World average and Asia average but it remain low.

Table ( 3. 2 ) Comparison of Myanmar, Asia Average and World Average Indexes

Index	Myanmar	Asia Average	World Average
EGDI	0.23619	0.5132	0.4922
OSI	0.15942	0.5120	0.4623
TII	0.06551	0.3730	0.3711
HCI	0.48365	0.6545	0.6433
E-Participation Index	0.10169	0.5182	0.4625

*Source: United Nations E-government Survey 2016*

### 3.2 Myanmar ICT Master Plans

Myanmar has already been three previous ICT master plans: the 2000–2005 ICT Master Plan, the 2006–2010 ICT Master Plan and Action Plan, and the 2011–2015 Follow Up Plan. The first focused on expediting the implementation of ICT development plans and establishing physical infrastructure. The 2006–2010 Plan laid the foundations to achieve the goal of increasing the teledensity rate from 1% in 2005 to 5.4% by 2011. The 2011–2015 Follow Up Plan was “socio-economic development through knowledge-based society.”<sup>53</sup>

Figure (3. 6 ) Myanmar E-Governance Master Plans

Modernize Myanmar through e-Government		
Stage I (2006~2010)	Stage II (2011~2015)	Stage III (2016~2020)
Catch up the average of ASEAN countries	Belong to the leading group of ASEN	Lead the less developed countries
Connect & Provide	Digitize & Manage	Make own Model
Think Big But Start Small	Scale Fast	Integrate

Source: ICT Development Status in Myanmar

### 3.3 Myanmar E-Governance Master Plan (2016~2020)

The draft Myanmar e-Governance Master Plan, with the support of ADB has been completed in 2015. The draft Master Plan has been revised by the cooperation of international consultants and the responsible persons from the department of Information Technology and Cyber Security, Ministry of Transport and Communication as Myanmar e-Governance Master Plan (2016~2020).<sup>54</sup>

<sup>53</sup> K. Nam et al (2015) *Developing Myanmar’s information and communication technology sector toward inclusive growth* No.462 ADB economics working paper series.

<sup>54</sup> *Myanmar e-governance Master Plan (2016~2020)*, p.5.

### 3.3.1 Objectives

The objectives of Myanmar e-Governance Master Plan (2016~2020) are as follows:<sup>55</sup>

- ( a ) To form specific organizations, involved in the implementation of e-Government in Myanmar, and to define their responsibilities.
- ( b ) To be aware of existing implementation progress of e-Government and the benefits of e-Government in Myanmar.
- ( c ) To shape the requirements of e-Government implementation based on the information collected from discussion meeting with implementing agencies of e-Government in Myanmar and feasibility studies.
- ( d ) Based on analytical study of best practices in the world countries with successful e-Government system, to prepare e-Government project and work plan in priority.
- ( e ) To create better and more comprehensive system by reviewing existing ICT infrastructure and condition of applying e-Government system in Myanmar.
- ( f ) To identify the foundation/procedures to initiate and the procedures to continue.
- ( g ) Evaluating the skills and the gaps in skill development to set necessary measures for narrowing these gaps.
- ( h ) To make arrangement for capacity building and skill development.
- ( i ) To provide feedback on the required organizational structures, administration and defining responsibilities in forming implementing agency for the effective implementation of e-Government system.
- ( j ) To constitute policies and standards required for the effective and efficient implementation of e-Government system in Myanmar.
- ( k ) To ensure the accessibility of the system for the users (government, businesses, citizens and other stakeholders organization)
- ( l ) To develop a road map
- ( m ) To specify budget allocations required for project implementations.

### 3.3.2 Guidelines

The guidelines for the implementation of e-Government in Myanmar are as follows.<sup>56</sup>

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<sup>55</sup> Myanmar e-governance Master Plan (2016~2020), pp.2-3.

<sup>56</sup> Myanmar e-governance Master Plan (2016~2020), p.4.

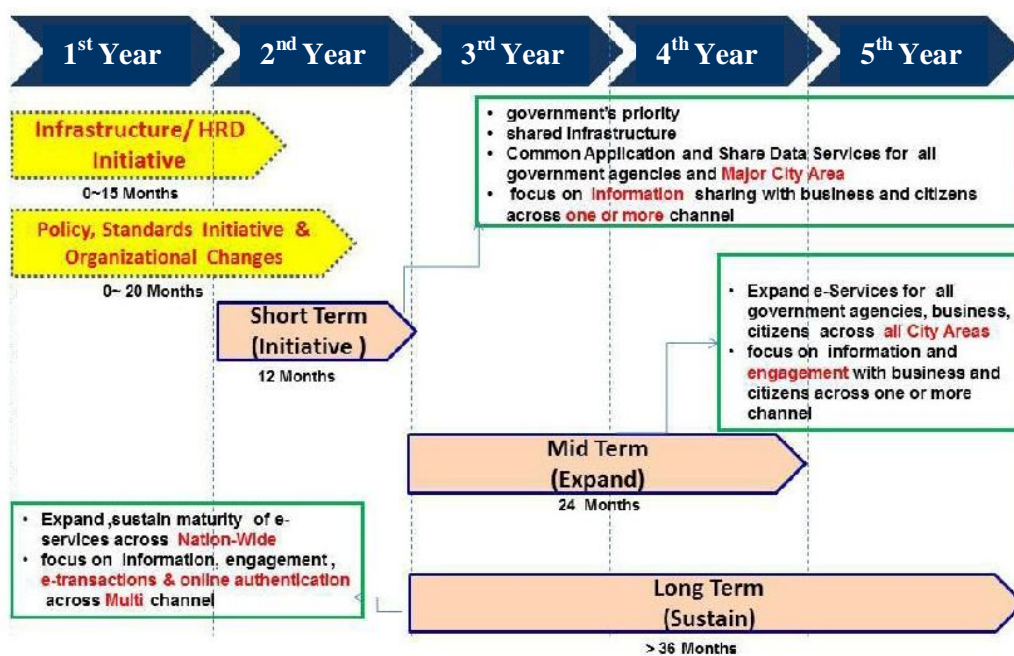
- ( a ) It is intended to extend utility based on existing resources. (e.g, e-Government network will be built on existing fiber network along the railway and road)
- ( b ) It is to ensure that G2G, G2B and G2C services should meet the utility needs of citizens and businesses.

### 3.3.3 Different Steps of Road-Map

In order to implement the process step by step according to the road-map, it is divided into different parts such as initial tasks, short-termed projects, middle-termed projects and long-termed projects.<sup>57</sup>

Figure (3. 7 ) Different Steps of Road-map

#### Implementation Roadmap Recommended by e-Government Master Plan (2016~2020)



### 3.3.4 E-Government Conceptual Architecture Framework

The e-Government Conceptual Architecture Framework, needed for the successful implementation of e-Government system in Myanmar is described in Figure (3.8), is divided into (7) stages, suggesting specific tasks to be implemented in cost-effective manner by different government agencies/departments.<sup>58</sup>

- (a) Governance, Policies and Skills
- (b) Shared Network and Infrastructure

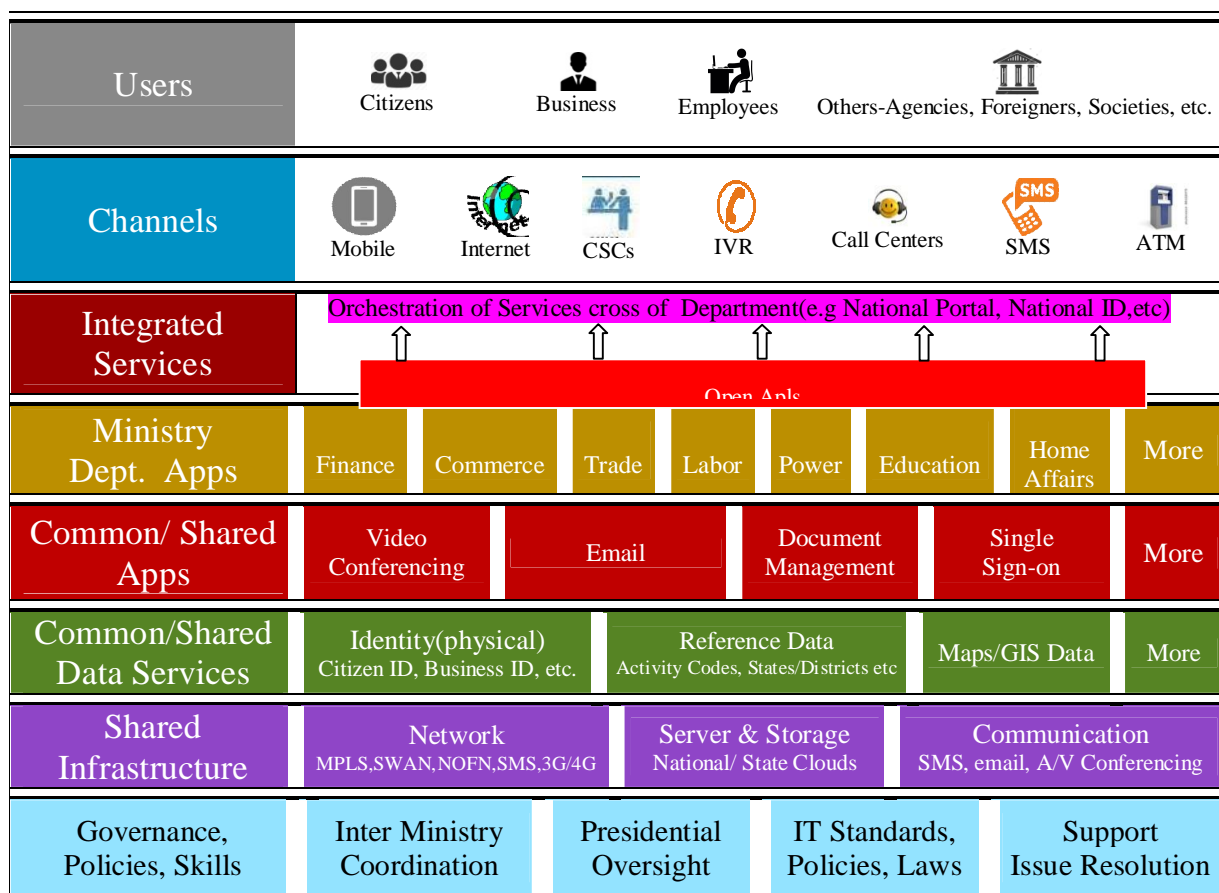
<sup>57</sup> Myanmar e-governance Master Plan (2016~2020), p.72.

<sup>58</sup> Myanmar e-governance Master Plan (2016~2020), p.80.

- (c) Common Data Services
- (d) Shared Applications
- (e) Ministry Specific Applications
- (f) Integrated Services
- (g) Channels

Figure (3. 8) E-Government Conceptual Architecture Framework

### All departments should adopt a Unifying Architecture



Source: Myanmar e-governance Master Plan (2016~2020)

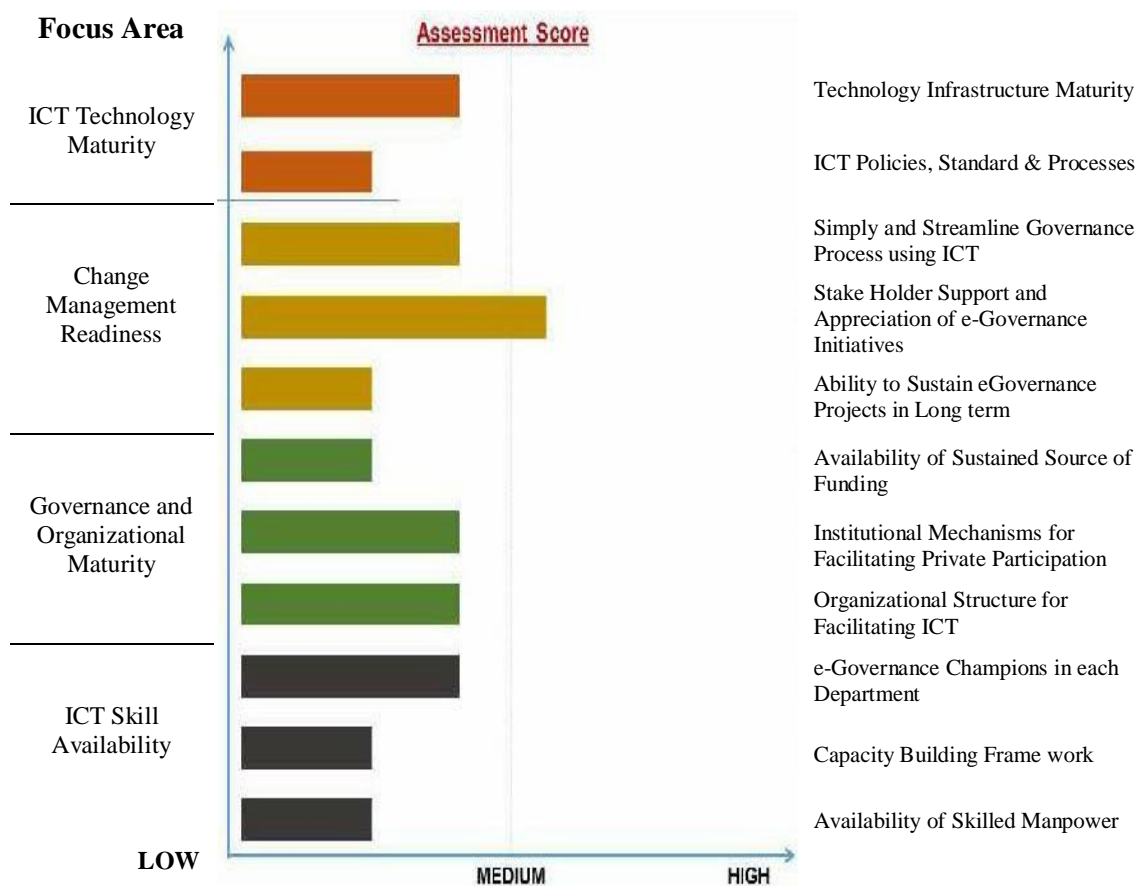
Framework describes different stages to be implemented for continuing existing activities; avoiding duplication of project activities; and proposed integrated services to be provided for people. It can be transformed from conventional department-centered service system into user-centered system.

### 3.3.5 Current E-Government Implementation Status in Myanmar

The current conditions of e-Government infrastructure (The status of hardware, Data-Centers and Network), utilization of e-Government application, formation of implementing

agency for e-Government process, the availability of ICT skilled personnel, policy and standardization in ICT related area, are divided into four components as follows, on which detailed evaluation has been presented in Figure (3.9).<sup>59</sup>

Figure (3.9) Current E-Government Implementation Status in Myanmar



Source: Myanmar e-governance Master Plan (2016~2020)

- Technology (ICT maturity and assessment of e-Government infrastructure)
- Person (ICT skills availability and maturity)
- Procedures (organizational policies, capacity and maturity with respect to e-Government)
- Transformation in government's management process (government readiness to change)

<sup>59</sup> Myanmar e-governance Master Plan (2016~2020), p.19.



### 3.4 Local-Language Readiness

In order for the Government's electronic services to be described in Myanmar language for people to understand better, It is necessary to set up specific standards on Computerized Myanmar Fonts system, to be in line with international standard and Myanmar language orthography. In technical as well as technological standard criteria, it is necessary to follow international standard while in language standard criteria, it is to follow orthography, specification, changing perspective, serial arrangement and so on. Only then, there will be more understanding and widespread use among people. Addition to Myanmar language, it is necessary to consider the use of ethnic language by implementing as national level, using Unicode's code points (recognized internationally).<sup>60</sup>

The language, going to be used in Applications and e-Government process in Myanmar, should be in both English and Myanmar, bilingually. Hence, it is necessary to set Myanmar Unicode system as the standard Myanmar language system used in e-Government application.

Myanmar Character code set was included in ISO 10646 in 1998. Myanmar language processing was first discussed in the repertoire in Unicode 3, in 1998. Further discussion in Unicode 4 was published in 2003<sup>61</sup>. Moreover, implementing the process of using other ethnic languages should also be continued.

Although Microsoft adds Myanmar language in Windows 8 that support Myanmar Unicode built in and font family name is Myanmar Text, but most of the website and internet user used Zawgyi font. It does not follow the Unicode standard and not able to search the data properly. So use of the fonts in website and internet users is the challenge for Myanmar language development in ICT.

### 3.5 IT Policies and Legal Framework

E-Governance Policy Framework recommended by e-Governance Master Plan (2016~2020) 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 the Myanmar government. As the peace of adoption of e-governance

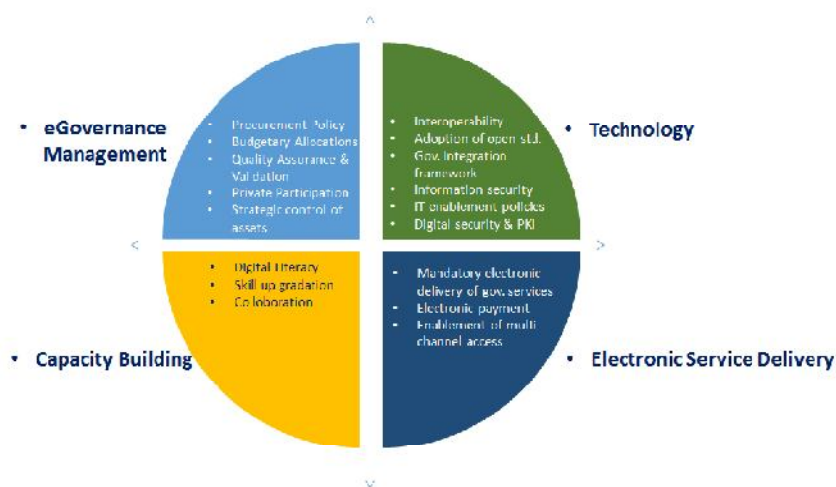
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<sup>60</sup> *Myanmar e-governance Master Plan (2016~2020)*, pp.56-57.

<sup>61</sup> *ICT Development Status in Myanmar* - unpan1.un.org, <http://unpan1.un.org/intradoc/groups/public/documents/un-dpadm/unpan043801.pdf> (accessed 1 November 2017).

increases Myanmar needs to have an institutional framework to new policies as well as keep the current policies updated, relevant and effective.

Figure (3. 10) Policy of Information Technology



Source: Myanmar e-Governance Master Plan (2016~2020)

The government, aiming at the economic development, has included the policy “to establish Data ID Card System, Digital Government Strategy and e-Government system” in the economic policy as a national objective in August, 2016, for the successful implementation of e-Government process.

Although development of ICT and application of computer technology in government administrative mechanism in existing laws, the principals to support the development of e-Government system are not included yet in standing laws. Therefore, it is needed to revise and include the clear definition of the characteristic and purpose of e-Government in the standing law or to constitute new legislation. The standing laws related to ICT in Myanmar are as follows;<sup>62</sup>

1. Computer Science Development Law (1996)
2. Electronic Transaction Law (2004)
3. Telecommunication Law (2013)

<sup>62</sup> Myanmar e-governance Master Plan (2016~2020), p.37.

### **3.5.1 Computer Science Development Law (1996)**

Computer Science Development Law was enacted on September 20, 1996<sup>63</sup>. It focuses mainly on business license, inspection, prohibition, formation and duties of computer science development council, computer associations, and computer federation. As it was prepared and introduced in 1996, the law does not seem to be compatible with current situations. It is observed that the law cannot cover modern technology, cannot fully provide data security and protection of privacy, cannot fully provide protection against cybercrime and cannot fully contribute to the implementation of government's work plans with the help of information technology. As a consequence, it is necessary to revise this computer Science Development law for the development of information technology.

### **3.5.2 Electronic Transaction Law (2004)**

The Electronic Transaction Law was first enacted on April 30, 2004 and amended in 2014.<sup>64</sup> This law was developed and enacted to protect electronic transaction related matters\_ electronic signature, legality of electronic documents and evidence from any illegal deceptions. In 2014 Amendment, only particular prescriptions of penalties were revised. Hence, it is, now, necessary to revise the law in order to be compatible with changing technology and systems today.

### **3.5.3 Telecommunications Law (2013)**

The telecommunication law was enacted on October 8, 2013, amended 2017. In 2017 Amendment is only for punishment of data disseminations of data electronically. The main objective of Telecommunications Law is to liberalize the market to allow for more private domestic and foreign operators and investors to provide efficient ICT services. The law's provisions expand the telecommunication network throughout the country and facilitate the sector's development. It provides for the establishment of the types of licenses, and the basic rules on interconnection, competition, and dispute resolution. The law sets out the authority and powers of the Ministry of Communications and Information Technology (MCIT) (now Ministry of Transport and Communication) and, more importantly, it provides for the creation of an independent regulator, the Myanmar Telecommunications Commission and the government's overall policy on private sector participation in the sector.

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<sup>63</sup> *The Computer Science Development Law*, The State Law and Order Restoration Council Law No. 10/96

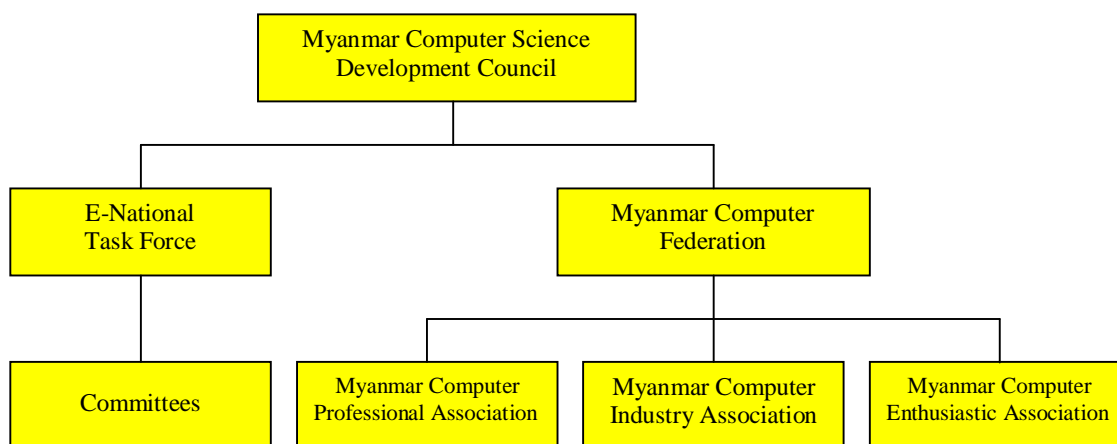
<sup>64</sup> *Myanmar e-governance Master Plan (2016~2020)*, p.27.

Myanmar ICT legal framework has been developed not by a systematic blueprint but by temporary needs. Individual laws or ordinances have been made by urgent needs when it was made or modified. Since e-Government process plays an important role in the economic development in Myanmar, it is important to review and revise the existing legal and policy frameworks as needed in order to be better and more comprehensive.<sup>65</sup>

### 3.6 ICT Institutions

There are institutions in Myanmar ICT development. Myanmar Computer Science Development Council is established in 1996. Myanmar Computer Federation (MCF) is established in 1998. MCPA, MCIA and MCEA are subordinated by MCF.<sup>66</sup>

Figure (3.11) Institutions Responsible for ICT Development in Myanmar



*Source: ICT Development Status in Myanmar*

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 organization 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 & professional members, six hundred corporate members and over a hundred thousand young basic education student members<sup>67</sup>. To get ICT awareness, MCF performs seminars and workshops professionals and ICT industry. MCF also performs

<sup>65</sup> *Myanmar e-governance Master Plan (2016~2020)*, p.29.

<sup>66</sup> *ICT Development Status in Myanmar* - unpan1.un.org, <http://unpan1.un.org/intradoc/groups/public/documents/un-dpadm/unpan043801.pdf> (accessed 1 November 2017).

<sup>67</sup> <http://www.mcf.org.mm/profile.html> (accessed November 16, 2017).

ICT Caravan to rural areas for the basic ICT awareness and knowledge creation for the local people and students.

### 3.7 ICT Industry

This is about 350 ICT Companies members in Myanmar Computer Industry Association (MCIA). Software development and other is 24.7 %, Training is 27.46%, Hardware Sales is 27.14%, Systems Integration is 11.59% and Network Solutions is 8.55%.<sup>68</sup>

Local businesses have started using computer software systems since early 1990s. There is a market for business application software such as accounting, point of sales, inventory management, Billing systems for private hospitals and clinics. Some software houses are also doing outsourcing jobs.

Since copyright law for IT has not enforces yet, most of the software systems such as MS Windows, office applications are pirated copies. Although this gives our people have a chance to learn and use modern software applications, local software developers a great difficulty in protecting their IP rights.

### 3.8 Cyber Security

Although Myanmar has a rapid growth in internet usage and smart phones, knowledge of cyber security did not progress at the same rate. Microsoft's 2017 report, Security Intelligence Report Volume 22, has revealed that Myanmar is now the 4<sup>th</sup> most exposed country in Asia Pacific to malicious programmes, among Bangladesh, Cambodia, Indonesia and Vietnam.<sup>69</sup>

In 2014, Microsoft worked with Myanmar Ministry of Communications and Information Technology (now Ministry of Transport and Communications) to improve the country's cyber security. The company prepared and showed the government the necessary measurements to be taken when a cyber threat arises. MPT launched educational seminars in schools, universities and industrial zones in February 2016, to teach the public how to use

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<sup>68</sup> *ICT Development Status in Myanmar* - unpan1.un.org, <http://unpan1.un.org/intradoc/groups/public/documents/un-dpadm/unpan043801.pdf> (accessed 1 November 2017).

<sup>69</sup> <http://iotbusiness-platform.com/blog/cyber-security-crucial-in-development-of-myanmars-ict-industry> (accessed 12 November 2017).

smart phones safely and economically. 56 workshops were hosted in 28 townships, discussing on internet safety and controlling data usage.<sup>70</sup>

Myanmar Computer Emergency Response Team (mmCERT) is a national computer emergency response team for dealing with cyber security incidents in Myanmar. Besides doing incident handling mmCERT also works to increase public awareness in security with the various ways of resources sharing to our community. And it intends to provide cyber security advice to Myanmar Internet users to prevent Internet based attacks. Hence mmCERT aims to serve as a repository for incident as well as a coordinator of incident response across an organization. This coordination extends outside the organization to include collaboration with other CERT/CSIRT teams, security experts, and law enforcement agencies in local and global.<sup>71</sup>

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<sup>70</sup> <http://iotbusiness-platform.com/blog/cyber-security-crucial-in-development-of-myanmars-ict-industry> (accessed 12 November 2017).

<sup>71</sup> <http://www.mmcert.org.mm/> (accessed 16 November, 2017).

## Chapter-4

### RESEARCH FINDINGS AND DISCUSSION

The survey is not intended to provide a complete picture on the actual requirements of e-services through e-Government websites in Myanmar. It provides an overview of particular e-services expectations from certain citizens and e-services provided by Myanmar e-Government websites.

Most of the respondents want e-services because it will save the time, money, and resources by getting increased efficiency and better communication among the citizens and Government. The respondents mentioned different types of possible hindrances to offer services through websites like lack of technical skill of the officials, weakness of policy and regulatory framework and lack of infrastructure and logistics.

There are some e-services leading ministry such as Ministry of Commerce which is already provided e-services to its customer. These provided e-services can stimulate further development process of e-Government services in Myanmar.

#### 4.1 Data Obtained from Officials

##### 4.1.1 Distribution of Respondents by Age

The distribution of respondents such as the Chief Information Officers (CIO), the officials who are responsible for e-government works are consolidated below according to age.

Table (4. 1) Distribution of Respondents by Age (n=30)

Age Group	Frequency	Percentage
21-30	1	3.33 %
31-40	12	40.00 %
41-50	15	50.00 %
51-60	2	6.67 %
Total	30	100.00 %

From the above Table 4.1, it has been found that most of the respondents(50 %) fall in the age group 41-50 and the least (3.33%) of them fall into age group 21-30 . And then (40%) fall into age group 31-40 and (6.67%) fall into age group 51-60. Age group revealed that most of the respondents were middle age people, age group 31-50 took (90% )of respondents.

### 4.1.2 Language Uses in Websites

There are 24 ministries in Myanmar, among them 20 Ministries established own website, 4 ministries (Ministry of Home Affairs, Ministry of Office of the Union Government, Ministry of Ethnic Affairs and Ministry of International Cooperation) do not have own website. Some ministries have two website such as Ministry of Religious Affairs and Culture, Ministry of Labor, Immigration and Population, and Ministry of Education; they have two website respectively.

Table (4. 2) Language uses in websites (n=30)

English only		Myanmar only		Both Language	
Quantity	Percentage(%)	Quantity	Percentage(%)	Quantity	Percentage(%)
2	6.67 %	8	26.67%	20	66.67%

From the above table it is shown that more than half (66.67%) of the government website use both English and Myanmar Language, two ministries (Ministry of Foreign Affair and Ministry of Defense) (6.67%) use English only and (26.67%) eight ministries use Myanmar only.

### 4.1.3 New Trend for Service Delivery

#### 4.1.3.1 Viewing on Smart Phone

Table (4. 3) Government website with easily viewing on smart phones (n=30)

Viewing on smart phone	Yes		No	
	Quantity	Percentage(%)	Quantity	Percentage(%)
Easy viewing on smart phone or not	11	36.67%	19	63.33%

#### 4.1.3.2 Usage of Mobile Application

Table (4. 4) Usage Mobile Application in Ministry/Department (n=30)

Usage of mobile application	Yes		No	
	Quantity	Percentage(%)	Quantity	Percentage(%)
Use mobile application or not	9	30%	21	70%

From the table (4.3) it is shown that only (36.67%) of the e-government website can be easily seen by smart phone, the rest (63.33%) cannot be easily seen. From the table (4.4)



only (30%) of ministries/department use mobile application to provide e-service to their service receiver and the rest (70%) do not use.

#### 4.1.3.3 Integrate Online Payments

Table (4. 5) Government websites integrate online payments (n=30)

Online Payments	Yes		No	
	Quantity	Percentage(%)	Quantity	Percentage(%)
Integrate online payments	4	13.33%	26	86.67%

Although (26.67%) of e-government website provide online filling of forms and application, from the above table it is shown that only (13.33%) of the e-government website integrate online payments for users to complete the entire process online 24/7, the rest (86.67%) did not integrate.

#### 4.1.3.4 Arrange Information

Table (4. 6) Government website arrange information with logical patterns (n=30)

Arrange information	Yes		No	
	Quantity	Percentage(%)	Quantity	Percentage(%)
logical patterns (subjects matter) or not	15	50%	15	50%

From the above table it is shown that it has equal quantity on e-government website it arrange the information on logical patterns or subjects matter (not departmental) and not arrange.

#### 4.1.3.5 Usage of Social Media

Table (4. 7) Ministries/Departments use social media (n=30)

Social Media	Yes		No	
	Quantity	Percentage(%)	Quantity	Percentage(%)
Social media use or not	20	66.67%	10	33.33%

Table (4. 8) Government website sync with social media (n=20)

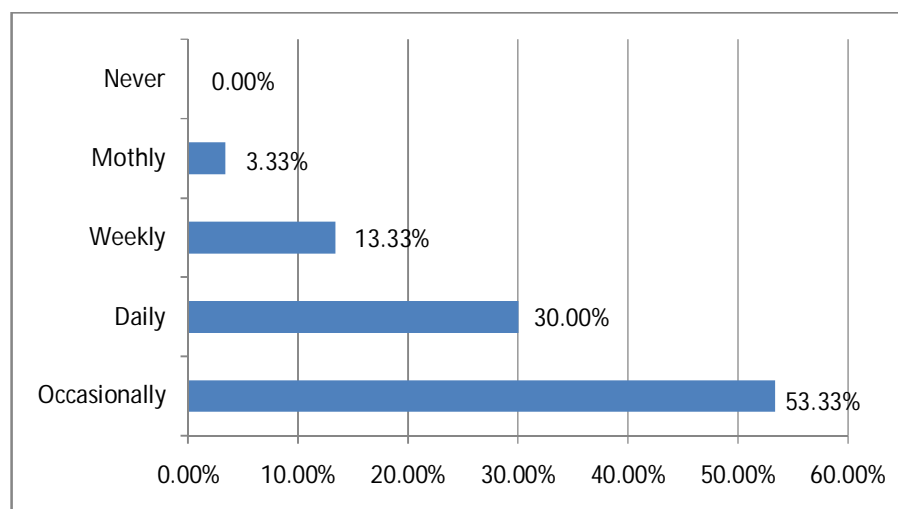
Sync with social media	Yes		No	
	Quantity	Percentage(%)	Quantity	Percentage(%)
Sync with social media or not	14	70%	6	30%

From the above tables, it is shown that 20 (66.67%) of ministries and department use social media (such as Facebook, Twitter, etc) for disseminating information, the rest 10 (33.33%) did not use. Out of the 20 ministries and department that use social media, 14 (70%) of e-government website sync with social media websites.

#### 4.1.4 Website Maintained and Updated

All of ministries/departments websites are being maintained and updated by both internal ICT professional and outsourcing. Website design and maintenance is done by outsourcing and update is done by internal ICT professional.

Figure (4.1) Government website maintain and update (n=30)



From the above figure it is observed that more than half (53.33%) of the e-government website is update occasionally, (30%) of those are update daily, (13.33%) update weekly and only (3.33%) update monthly. There is no e-government website that never update.

#### 4.1.5 Important Feature of e-Government Websites

Table (4. 9) Important features contain in existing government websites (n=30)

Item	Exist	Not Exists	Comment
Contact address	73.33%	26.67%	Most of the website did not mention name and position of contact person
e-mail alert for update information	13.33%	86.67%	

Item	Exist	Not Exists	Comment
FAQ	20.00%	80.00%	
Search box	50.00%	50.00%	
Online filling of applications, forms	26.67%	70.00%	Needed to integrate online payment.
Downloadable forms and applications	30.00%	73.33%	
Online surveys	3.33%	96.67%	
Up to date calendars events	20.00%	80.00%	
Ministry's/Department's statistics/ publications	86.67%	13.33%	
Ministry's/ Department's laws and regulations	90.00%	10.00%	
Comment/ feedback box	40.00%	60.00%	
All of the items	0.00%	100.00%	

Out of the 30 e-Government website, only one (3.33%) obtain valuable feedback with online surveys and polls for quick, inexpensive information gathering. 27 (90%) provide Ministry's/ Department's laws and regulations and no e-government website provide all of important features.

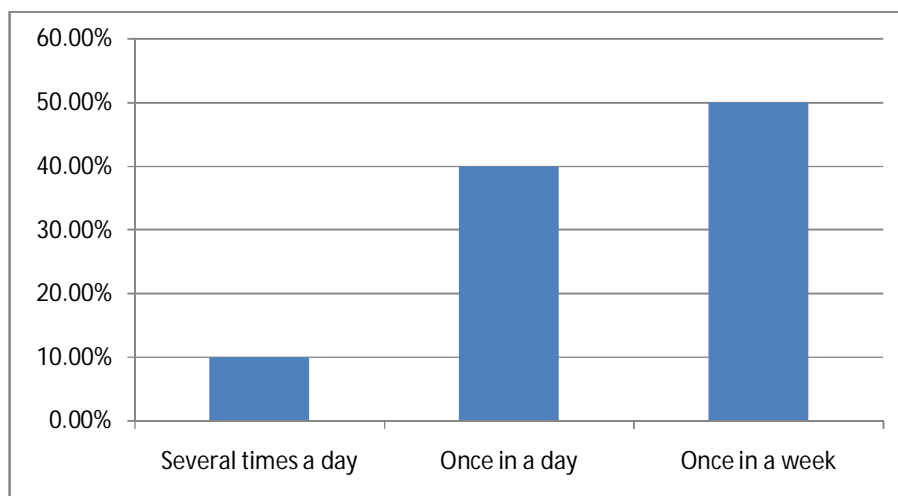
#### 4.1.6 E-mail Used for Office Works

Table (4. 10) Type of e-mail used for official purpose (n=30)

Official e-mail		Personal e-mail	
Quantity	Percentage(%)	Quantity	Percentage(%)
12	40%	18	60 %

From the above table it is shown that only (40%) of the government official used the official email for official purpose and (60%) used the personal e-mail for official purpose.

Figure (4.2) Use of email at office works (n=30)

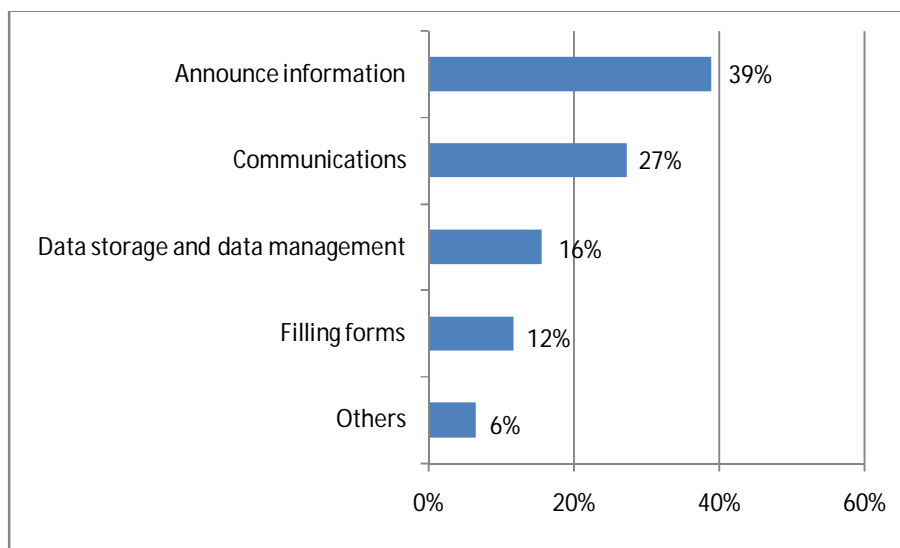


The figure (4.2) indicates that only (10%) of the respondents use e-mail several times in a day and (40%) use it once in a day and (60%) use once in a week. It is indicated that government need to provide official email and then it also need to enforce the government official to used that email for office work.

#### 4.1.7 Website Helps to Strengthen Service Delivery

E-Government website is the basic form of government e-service delivery and smooth government service, e-government website must be needed. The figure below is office website helps to strengthen service delivery.

Figure (4.3) How website helps to strengthen service delivery

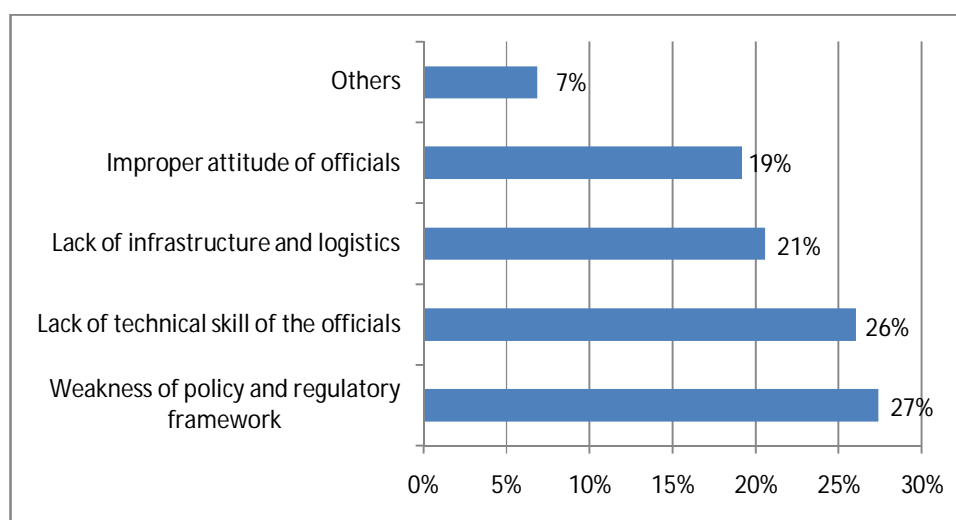


From the above figure it is observed that the majority of the respondents, (39%) mentioned that they think office website help to “Announce information”, whereas (27%) said it is to be “Communications”, (16%) said that for “Data storage and data management”, (12%) used website for “Filling forms” and rest (6%) used for “Others”.

#### 4.1.8 Problems and Challenges for e-Services through Websites

The respondents provided their opinion in terms of possible hindrances to offer services through websites is presented below.

Figure (4.4) Problems and challenges for e-Services through websites



The figure shows that majority of the respondents (27%) ranks “Weakness of policy and regulatory framework” and (26%) ranks “Lack of technical skill of the officials” as the most alarming barrier to offer services through websites. The next to Lack of technical skill of the officials” is “Lack of infrastructure and logistics” which is viewed by (21%) of the respondents. Besides these, “Improper attitude of officials” (19%) and “Others” are exponential possible hindrances to offer services through websites in Myanmar.

## 4.2 Data Obtained from Beneficiaries

### 4.2.1 Distribution of Respondents by Age

The distribution of respondents such as the company staff, tax payer, the citizens who their work are very closely related to the government office, are consolidated below according to age.

Table (4. 11) Distribution of Respondent by Age (n=30)

Age Group	Frequency	Percentage
21-30	9	30.00 %
31-40	15	50.00 %
41-50	4	13.33 %
51-60	2	6.67 %
Total	30	100.00 %

From the above Table (4.11), it has been found that most of the respondents (50%) fall in the age group 31-40 and the least (6.67%) of them fall into age group 51-60 . And then (30%) fall into age group 21-30 and (13.33%) fall into age group 41-50. Age group revealed that most of the respondents were younger people, age group 21-40 took (80%) of respondents.

#### 4.2.2 Awareness of Public to the Government E-Services

Table (4. 12) Awareness of Public to the government provided e-services (n=30)

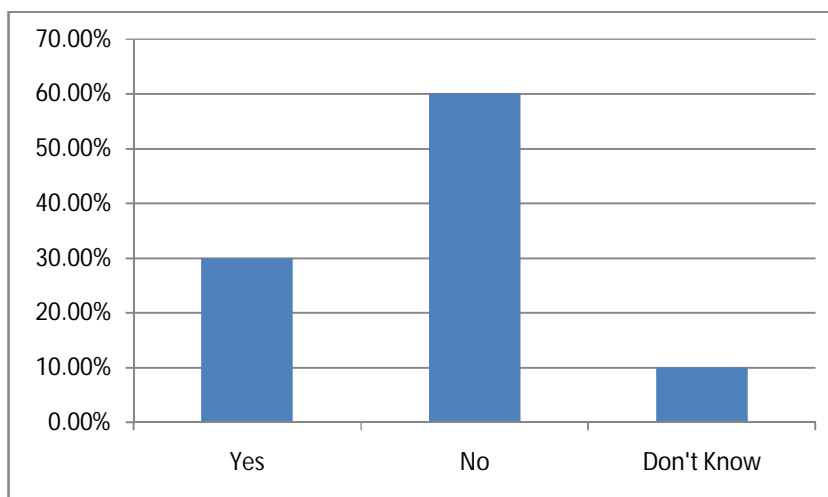
Government provide e-services	Yes		No	
	Quantity	Percentage(%)	Quantity	Percentage(%)
Known provided e-services or not	27	90%	3	10%

From the above tables it is shown that only (10%) of the service seeker do not know the government offices provide e-services to the citizen and (90%) of respondent already known about it.

#### 4.2.3 Form/information available in the websites regarding the service

In response to a query whether the government website provided services to citizens forms/information is regarding the service is shown in figure (4.5).

Figure (4.5) Form/information available in the websites regarding the service (n=30)



The above figure indicates that although the government offices provide forms/information but it is not regarding for (60%) of respondents. However (30%) of respondents said that some of service provided by government website is useful. The rest (10%) responds that they don't know.

Table (4. 13) Type of selected service wanted from service seeker (n=30)

Item	Mention %	Not Mention %
Contact address	90.00%	10.00%
e-mail alert for update information	50.00%	50.00%
FAQ	73.33%	26.67%
Easily search for data and information	70.00%	30.00%
Online filling of applications, forms	96.67%	3.33%
Online Payments	30.00%	70.00%
Downloadable forms and applications	60.00%	40.00%
Online surveys	0.00%	100.00%
Up to Date calendars events	20.00%	80.00%

Item	Mention %	Not Mention %
Ministry's/Department's statistics/ publications	66.67%	33.33%
Ministry's/ Department's laws and regulations	83.33%	16.67%
All of the items	0.00%	100.00%

It is surprising that all of respondents (100%) do not wanted online surveys, it indicate there is no citizen who participate in government online survey. Most of the selected services is wanted by the respondents (mention 60 to 96 percent of respondents) only online payments and up to date calendars events is (30%) and (20%) respectively.

#### 4.2.4 Update to Date Services

Table (4. 14) Percentage of respondents who has the device, it can use the internet. (n=30)

Computer or Smart phone	Yes		No	
	Quantity	Percentage(%)	Quantity	Percentage(%)
Have or not	26	86.67%	4	13.33%

From the above tables it is shown that (86.67%) of service seeker have the computer or smart phone, it can use the internet, whereas the rest (13.33%) do not have.

Table (4. 15) Easily viewing the government website on smart phones (n=26)

Easily viewing on smart phone	Yes		No	
	Quantity	Percentage(%)	Quantity	Percentage(%)
Easy view or not	6	23.08%	20	76.92%

From the above table it is shown that only (23.08%) of the government website can be easily seen on smart phone and (76.92%) cannot.

Table (4. 16) Service Seekers who wanted Mobile Application(n=26)

Mobile Application	Yes		No	
	Quantity	Percentage(%)	Quantity	Percentage(%)
Wanted or not mobile application	22	84.62%	4	15.38%

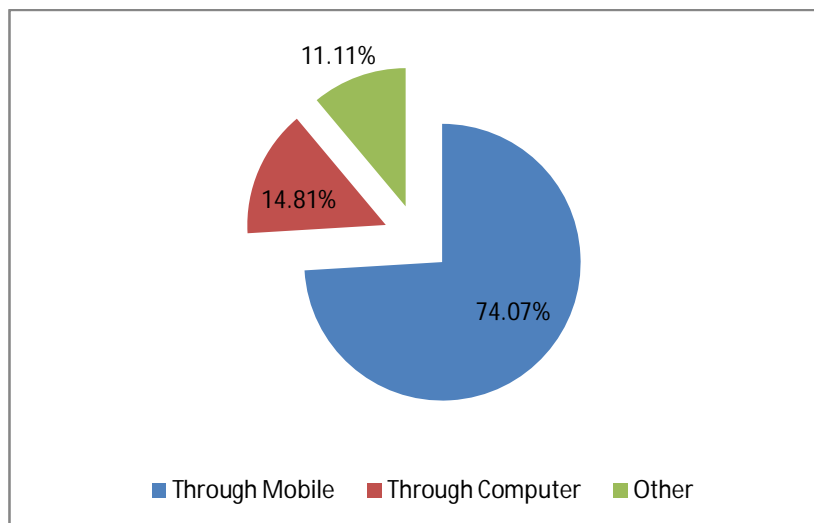
From the above table it is shown that (84.62%) of service seeker wanted to use ministry/department mobile application and only (15.38%) do not want to use.



#### 4.2.5 How e-Services are obtained by the Service Seekers

In a query it is found that more than (85%) of the respondents (n=27) do not get e-service through computer. It is interesting that the main source of most of the E-Services received by the citizens is 'Mobile Phone' about (74%). The scenario is described by the figure below (4.6).

Figure (4.6) Sources of E-Services (n=27)



#### 4.2.6 Arrange the Information

Table (4. 17) Citizens' perception on website information is well organized or not (n=27)

Arrange information	Yes		No	
	Quantity	Percentage(%)	Quantity	Percentage(%)
Well organized information or not	6	22.22%	21	77.78%

From the above table it is shown that only the (22.22%) of respondents think information related to public service is well organized and time benefiting in government websites but the majority of respondents (77.78%) do not think.

#### 4.2.7 Citizen Participation in Government E-Services

Table (4. 18) Citizen Participation on government website (n=30)

Giving opinion	Yes		No	
	Quantity	Percentage(%)	Quantity	Percentage(%)
Want to give opinion or not	9	30%	21	70%

From the above tables it is shown that only (30%) of respondents have a desire to give their opinion on ministry/department by using comment/feedback box from website, whereas the rest (70%) do not have. Citizen participation in e-service delivery is very important because it can be known how to improve the government website.

#### 4.2.8 Receiving Information from Social Media

Table (4. 19) Percentage of respondent who want to get government information from social media (n=30)

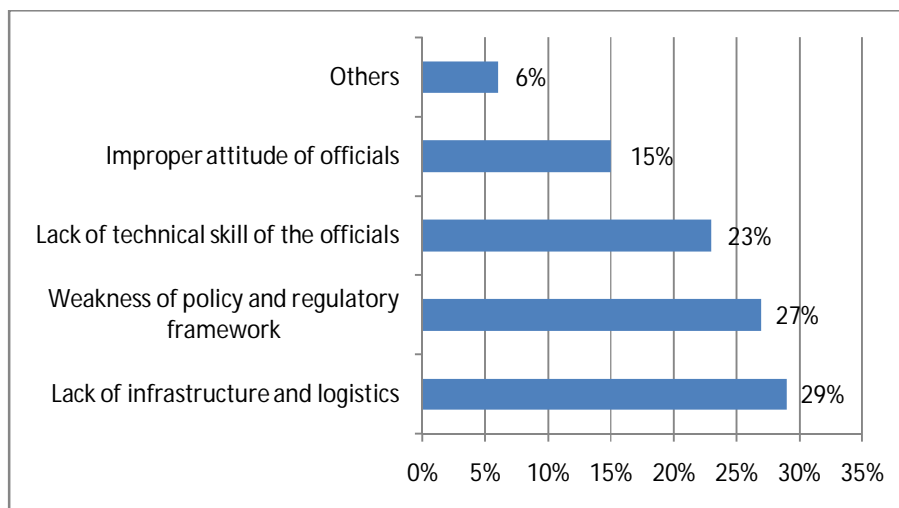
Social Media	Yes		No	
	Quantity	Percentage(%)	Quantity	Percentage(%)
Want to get information or not	28	93.33%	2	6.67%

It is surprising that nearly all of respondents (93.33%) want to get the government information from social media (such as Facebook, Twitter, etc) and only (6.67%) do not want to get. Information from social media is not reliable so to reach the truth information to the public, government needed to disseminate information by using official social media webpage.

#### 4.2.9 Problems and Challenges for E-Services through Websites

The respondents provided their opinion in terms of possible hindrances to offer services through websites is presented below.

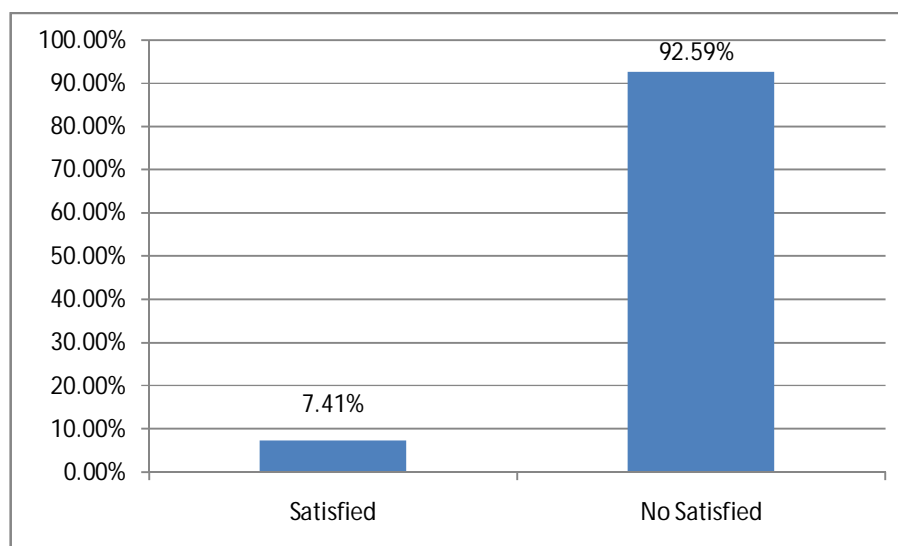
Figure (4.7) Problems and challenges for e-Services through Websites



The figure shows that majority of the respondents (29%) ranks “Lack of infrastructure and logistics” and (27%) ranks “Weakness of policy and regulatory framework” as the most alarming barrier to offer services through websites. The next to Weakness of policy and regulatory framework” is “Lack of technical skill of the officials” which is viewed by (23%) of the respondents. Besides these, “Improper attitude of officials” (15%) and “Others” are exponential possible hindrances to offer services through websites in Myanmar.

In another query almost (92.59%) of the respondents (25 out of 27) told that they are ‘Not satisfied’ with the present service delivery system, so it needed to improved which is depicted by the figure below(4.8).

Figure (4.8) Level of Satisfaction with Present E-Services (n=27)



### 4.3 Comparison of Government Provided and Citizen Expected Services

Table (4. 20) Comparison of Government provided services and Citizen expected services

No.	Selected Services	Government provided services (%)	Citizen expected services (%)
1	Contact address	73.33%	90.00%
2	e-mail alert for update information	13.33%	50.00%
3	FAQ	20.00%	73.33%

No.	Selected Services	Government provided services (%)	Citizen expected services (%)
4	Search Box	50.00%	70.00%
5	Online filling of applications, forms	26.67%	96.67%
6	Online payments	13.33%	30.00%
6	Downloadable forms and application	30.00%	60.00%
7	Online surveys	3.33%	0.00%
8	Up to date Calendar events	20.00%	20.00%
9	Ministry's/ department's Statics/publications	86.67%	66.67%
10	Ministry's/ department's Laws and regulation	90.00%	83.33%
11	Easy viewing on smart phone	36.67%	23.08%
12	Mobile application	30.00%	84.62%
13	Well organize information	50.00%	22.22%
14	Comment/feedback	40.00%	30.00%
15	Social Media	66.67%	93.33%

From the above table, it is shown that (73.33%) of service seeker wanted to read the Frequently Asked Question (FAQ) but only (20%) of government website provide that service.

And also (96.67%) of citizens wanted to get online filling of application/forms however (26.67%) of government website gave that features and to complete entire process online 24/7 it needed to integrate online payment but only (13.33%) of government website integrate with it.

Although (74.07%) of service seeker get the e-service through mobile device, only (36.67%) of government website can be easily seen by mobile phone. And also (84.62%) of service seeker wanted mobile application however (30%) of Ministries/department provided it. (93.33%) of service seekers wanted to get Ministries/departments information from social

media but only (66.67%) of Ministries/departments used social media to disseminate their information.

#### **4.4 Discussion**

In the above findings there are some useful observations are revealed which are validated by “UN Model of four stages of online service development” to have an assessment of e-services through e-Government website in general and the ministry level and some national level website in Myanmar.

First and foremost, it is observed that (90%) of ministries/departments website provided their laws and regulations and 86.67% of ministries/ departments websites provided their statistics/publication. So most of the Myanmar government websites had crossed the “Emerging Information Services”.

Secondly, (26.67%) of ministries/departments websites provided online filling of application, forms and (30%) of ministries/ departments websites provided downloadable forms and applications. Hence more than one fourth of government website has passed the criteria of “Enhanced Information Services”.

Thirdly, only (3.33%) obtain valuable feedback with online surveys and (13.33%) of e-government integrate online payments. Therefore very few government website reach the “Transactional Services”.

Hence, the latter stage “Connected Services” are not necessary to assess as it is deemed that Myanmar e-Government websites are not fully passed the “Enhanced Information Services” although very few government website reach the “Transactional Services”.

An important finding of survey was that it needed to amend present policy and regulatory framework to transform smooth e-service delivery and more technical staff should be employed in Governmental departments to get better utilization of full possible potential of e-Government for the citizens. And also give the incentive to the technical staff; it can change the attitude of government staff. To overcome the lack of infrastructure and logistics for the public, government should construct public access center (digital center).

Government of Myanmar needs to identify the importance of e-service to citizens and these services should reflex the needs of citizens. The survey result shows that improvements are required for implementing e-Government website in Myanmar. Though lot of informative

websites is available but still their usage is not so common. To make them publicly accessible, Myanmar Government may need to follow a regional e-Government success country like Singapore because Singapore is already using e-Services.

## Chapter-5

### CONCLUSION AND RECOMMENDATIONS

#### 5.1 Conclusion

E-Governance has become a new fashion in the debate of public administration. Keeping the urge in mind the study is conducted to reveal the status of E-Services through e-Government website in Myanmar. The finding obtained from both demand and supply sides are crossed verified to have a common understanding of the overall scenario of e-Government website in Myanmar.

Among the 24 ministries of Myanmar, four ministries do not have their own website. Two ministries' website used only English Language that it causes expansion of digital divide. Most of the beneficiaries used internet by mobile device and they also want to get government information from social media. However, most of government website cannot be viewed easily on smart phone and usage of social media for disseminating information is still low in Myanmar. In addition, Government websites provide a little online filling of applications and form and it is needed to integrate online payment to complete entire process online 24/7.

In terms of analysis of the main problems and challenges to offer services through websites, it is also observed that weakness of policy and regulatory framework, lack of technical skill of the official and lack of infrastructure and logistics are hindrances to offer services through websites. Public participation in e-services through government website is very low; it also causes the hindrance to improve government e-services.

Regarding e-services, one of the scenarios to be considered is that citizens are not customers and the government is not a business. Citizens cannot choose the products or services they want to buy and they cannot switch to others. The success of an e-government website cannot be measured in terms of profits, and citizens cannot actually buy any products/services from the government. Citizens and government need to have a mutual interest in their relations. This means that as much as the government needs to provide smooth services to citizens, citizens need to be willing to provide feedback and interact.

The overall E-service through government website has not reached to the satisfactory level. Government provided E-service does not meet the needs and expectation of citizens. Moreover some government website do not meet the important features of website.

## 5.2 Recommendations

ICT is the key issue for development and to run a modern government in any democratic polity. It has emerged as a single most effective strategic intervention to empower citizens and deliver goods and services to the end stakeholders.

In Myanmar, some ministries use website only with English Language, and so it will be a problem for most of Myanmar people to translate to Myanmar language. Therefore government websites should use both English and Myanmar language. Moreover, E-government website in Myanmar is separately developed and some ministries do not have their own websites. Therefore, single login identity across all government website should be constructed in order to intercommunicate between ministries, departments, facilitating to promote cooperation between departments and departmental procedures, in parallel with building infrastructure, for example, National Government Portal, Citizen ID Management system.

In addition, all of government ministries and department should use social media to disseminate information and government website needed to modify it can be easily seen on smart phone. Government provided e-services should be compactable with mobile device that can be used independently of temporal and spatial restraints.

The number of internet users has grown rapidly over the years but citizens' participation in government e-services is very low in Myanmar. Therefore government needs to take campaign and educate the public.

## 5.3 Recommendations for Future Research

E-service is a wide and relatively new area of study. Present research, is an exploratory attempt to provide overview of ministerial level website in Myanmar. In this course, discussions and analysis were delineated on conceptual and theoretical aspects, status of global accepted website features and citizen expected services.

The wide scope of the field, in contrast, the limitations of the present study generate following future research. From Myanmar perspective, some of those may include:

1. E-Governance readiness of each Ministry and also every States/Regions in Myanmar.
2. The progress, obstacles and guidelines of establishing e-government in each Ministry and also every States/Regions in Myanmar.
3. E-Governance preparedness of bureaucracy and readiness of public in Myanmar.



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**APPENDIX A: REQUEST LETTER FOR INTERVIEWER**  
**E-SERVICES: A STUDY ON E-GOVERNMENT WEBSITES IN MYAMAR**

Survey Questionnaire for E-Government Websites

Date: 25<sup>th</sup> November 2017

Dear Sir/ Madam,

I am Aung Aung, I am a student at BRAC University and I am attending a Master of Arts in Governance and Development Course at BRAC University in Bangladesh. I am working Minister's Office (Planning) of Ministry of Planning and Finance. In the course of fulfilling my dissertation requirement for the Master Degree, I am conducting this survey for a research study. I am currently undertaking a study titled, **"E-Services: A Study on E-Government Websites in Myanmar"**.

The study focuses on the government e-services deliver by the website. Even though this study is a part of the academic activity of the MAGD program, this study will be useful for the design and structure of e-Government website for service delivery and it will be helpful to review the e-government website in Myanmar.

Your assistance in this research study is vital, even though your participation in this interview is completely voluntary. It will take almost 15 minutes to fill the questionnaires. There is no personally identifiable information on the questionnaires. All answers to this survey will be kept in strict confidence. Only summary measures and conclusions will be reported in the research. No data or opinions will be associated with specific individuals. All questionnaires will be returned directly to the researcher and will be destroyed once the data have been entered into the system, where it will be secured and will not be available to anyone outside of the researcher. **The data 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, please contact me at BRAC University, Savar Campus, Dhaka, Bangladesh. [Tel:+880177766129](tel:+880177766129), [aungaung.aa2009@gmail.com](mailto:aungaung.aa2009@gmail.com).

Thank you for your anticipated cooperation.

Yours sincerely,  
Aung Aung  
Assistant Director  
Student of MAGD 8, BRAC University  
Dhaka, Bangladesh.  
Email: [aungaung.aa2009@gmail.com](mailto:aungaung.aa2009@gmail.com)  
Tel: +8801777661279

**(Please email the completed questionnaire by the 5<sup>th</sup> December 2017 on the above email)**

## APPENDIX B: QUESTIONNAIRE FOR OFFICIALS

### E-SERVICES: A STUDY ON E-GOVERNMENT WEBSITES 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) e-Governance Service Delivery

*(Please put the tick ( ✓ ) in the box.)*

1. Your ministry/department website uses the following language. *(You can choose all possible options).*

Myanmar       English
2. Does your ministry/website content have easy for viewing on smart phones?
 

Yes                       No
3. Does your ministry/department website integrate online payments for users to complete the entire process online 24/7?
 

Yes                       No
4. Does your ministry/department website arrange the information on logical patterns or subjects matter (not departmental)?
 

Yes                       No
5. Does your ministry/department use social media for disseminating information (such as Facebook, Twitter, etc)?
 

Yes                       No
6. If the answer to question no.5 is 'YES' your ministry/department website have sync with social media websites (such as Facebook, Twitter, etc)?
 

Yes                       No
7. How website is being maintained and updated by?
 

Internal ICT Pffessional       Outsourcing       Both
8. How frequent the website is being updated?
 

Daily       Weekly       Monthly       Occasionally       Never

9. Which types of following services have in your ministry/department website. (Tick all that apply)
- Contact address
  - e-mail alert for update information
  - Frequently asked question (FAQ)
  - Search box
  - Online filling of applications, forms
  - Downloadable forms and applications
  - Online surveys
  - Up to date calendars events
  - Ministry's/department's Statistics/publications
  - Ministry's/department's Laws and regulations
  - Comment/feedback box
10. Does your ministry/department have mobile application?
- Yes                       No
11. For official purpose which e-mail you often use?
- Official e-mail                       Personal e-mail
12. If you have e-mail address, how often do you use e-mail for office works?
- Several times a day       Once in a day       Once in a week
13. How your office website helps to strengthen service delivery? (Tick all that apply)
- For communications                       For announce information
- For filling forms                       Others
- For data storage and data management
14. Which of the following are possible hindrances to offer services through websites? (Tick all that apply)
- Lack of technical skill of the officials       Improper attitude of the officials
- Lack of infrastructure and logistics       Others
- Weakness of policy and regulatory Framework

***(Thanks for your kind cooperation)***

## APPENDIX C: QUESTIONNAIRE FOR BENEFICIARIES

### E-SERVICES: A STUDY ON E-GOVERNMENT WEBSITES 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) e-Governance Service Delivery

*(Please put the tick ( ✓ ) in the box.)*

1. For what type of service are you visiting this office?  
.....
2. Do you know the government offices provide e-services to the citizen?  
 Yes       No
3. Is there any form/information available in the websites regarding the service?  
 Yes       No       Don't know
4. Which types of following services do you want to get from the website. (Tick all that apply)
  - Contact address
  - e-mail alert for update information
  - Frequently asked question (FAQ)
  - Easily search for data and information
  - Online filling of applications, forms
  - Online payments
  - Downloadable forms and applications
  - Online surveys
  - Update to date calendars events
  - Ministry's/department's Statistics/publications
  - Ministry's/department's Laws and regulations



5. Do you have any computer or smart phone, it can use the internet?  
 Yes       No
6. If you have smart phone, can you watch easily in viewing the ministry/departments website on your smart phones?  
 Yes       No
7. If you have smart phone, are you wanted to use ministry/department mobile application?  
 Yes       No
8. How do you get your maximum e-service?  
 Through mobile       Through computer       Others
9. Do you think information related to public service is well organized and time befitting in this office website?  
 Yes       No
10. Do you have a desire to give yours opinion on ministry/department by using comment/feedback box from website?  
 Yes       No
11. Do you want to get the ministry/department information from social media (such as Facebook, Twitter, etc)?  
 Yes       No
12. Which of the following are possible hindrances to strengthen e-services through websites? (Tick all that apply)  
 Lack of technical skill of the officials  
 Lack of infrastructure and logistics  
 Weakness of policy and regulatory Framework  
 Improper attitude of the officials  
 Others
13. Are you satisfied with the present e-service delivery system of government offices?  
 Yes       No
14. Is ICT used in providing the service you are opting for?  
 Yes       No
15. If the answer to question no.14 is 'NO' then do you think that ICTs can be used to provide the service?  
 Yes       No

***(Thanks for your kind cooperation)***